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(FILE 'HOME' ENTERED AT 06:56:17 ON 16 SEP 2004)

FILE 'REGISTRY' ENTERED AT 06:56:32 ON 16 SEP 2004

L1 STRUCTURE UPLOADED  
L2 0 S L1  
L3 0 S L1 CSS  
L4 STRUCTURE UPLOADED  
L5 0 S L4  
L6 STRUCTURE UPLOADED  
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L8 0 S L1 CSS  
L9 0 S L1 CSS FUL  
L10 1 S L6  
L11 11 S L6 CSS FUL

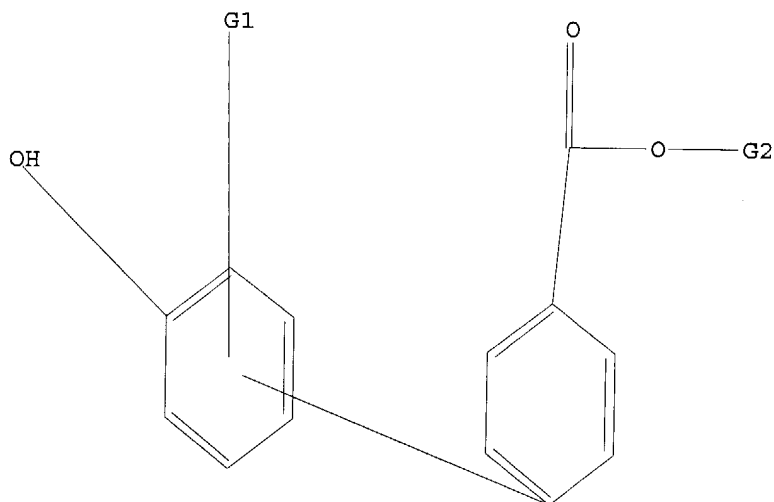
FILE 'CAPLUS' ENTERED AT 07:31:13 ON 16 SEP 2004

L12 15 S L11

=> d 16

L6 HAS NO ANSWERS

L6 STR



G1 X,H

G2 Cb,Ak

Structure attributes must be viewed using STN Express query preparation.

=> d bib abs hitstr 1-15

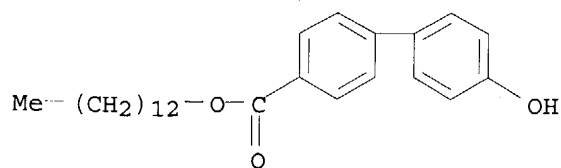
L12 ANSWER 1 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2004:416144 CAPLUS  
DN 141:148529  
TI Synthesis and phase behavior of liquid crystalline diphenylacetylene  
derivatives possessing high clearing temperatures  
AU Young, Douglas D.; Scharrer, Eric; Yoa, Mark V.  
CS Department of Chemistry, University of Puget Sound, Tacoma, WA, 98416, USA  
SO Molecular Crystals and Liquid Crystals (2004), 408, 21-31  
CODEN: MCLCD8; ISSN: 1542-1406  
PB Taylor & Francis, Inc.  
DT Journal  
LA English

AB Alkyl 4'-(4-phenylethynylbenzoyloxy)biphenyl-4-carboxylates, were prepared using a three-step synthetic procedure. Both the diphenylacetylene derivs. as well as their immediate precursors, alkyl 4'-(4-iodobenzoyloxy)biphenyl-4-carboxylates, exhibit liquid crystal behavior. The diphenylacetylene derivs. possess large liquid crystalline phase ranges and high clearing temps. Synthetic details and the phase behavior of these compds. are discussed.

IT 727668-59-9P 727668-60-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and esterification with iodobenzoic acid)

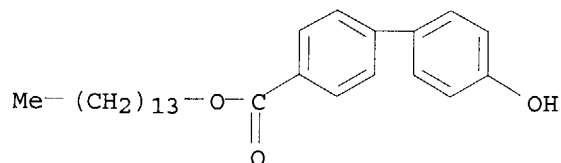
RN 727668-59-9 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, tridecyl ester (9CI) (CA INDEX NAME)



RN 727668-60-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, tetradecyl ester (9CI) (CA INDEX NAME)



RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 2 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:347776 CAPLUS

DN 141:72095

TI Organization of branched rod-coil molecules into a 3-D tetragonally perforated lamellar mesophase

AU Oh, Nam-Keun; Zin, Wang-Cheol; Im, Jun-Hwan; Ryu, Ja-Hyoung; Lee, Myongsoo

CS Department of Materials Science and Engineering, Pohang University of Science and Technology, Pohang, 790-784, S. Korea

SO Chemical Communications (Cambridge, United Kingdom) (2004), (9), 1092-1093  
 CODEN: CHCOFS; ISSN: 1359-7345

PB Royal Society of Chemistry

DT Journal

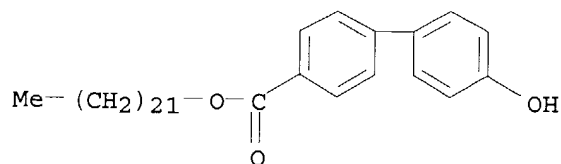
LA English

AB Tetramerization of coil-rod-coil ABC triblock copolymers to a tetrabranched mol. induces an unusual 3-D tetragonally perforated layered liquid crystalline phase as an intermediate structure between 1-D lamellar and 2-D hexagonal columnar phases.

IT 209126-69-2P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and organization of branched rod-coil monomeric and tetrameric mols. into a three-dimensional tetragonally perforated lamellar mesophase)

RN 209126-69-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, docosyl ester (9CI) (CA INDEX NAME)



RE.CNT 17 THERE ARE 17 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 3 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2004:271540 CAPLUS  
DN 140:294930  
TI Optically active compounds as chiral dopants, liquid crystal compositions, and display devices  
IN Oki, Yasue; Motoyama, Hiroki; Kino, Masahiro  
PA Mitsubishi Gas Chemical Co., Ltd., Japan  
SO Jpn. Kokai Tokkyo Koho, 10 pp.  
CODEN: JKXXAF  
DT Patent  
LA Japanese  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004099556	A2	20040402	JP 2002-265657	20020911
PRAI	JP 2002-265657		20020911		

OS MARPAT 140:294930

AB The compds. comprise R1\*OCOXCOR2\* [I; R1\*, R2\* = C\*HMe(CH2)nCH(CmH2+1)2, C\*HMe(CH2)pMe, C\*HMePh, C\*(C2H5)Ph; n = 1-3; m = 2, 3; p = 3-7; C\* = asym. C; R1\* and/or R2\* = C\*HMe(CH2)nCH(CmH2+1)2 (m = 3 if n = 1); X = Y2OCOY, Y2CO2Y, Y3, Y2OCOCy, YOCOCYCO2Y, YOCOCyCO2Y, YOCONpCO2Y, YCO2Np; Y = 1,4-phenylene; Cy = trans-1,4-cyclohexylene; Np = 2,6-naphthylene]. The liquid crystal compns. contain ≥1 I. I shows helical twisting power ≥10 and induced helical pitch decreased in length with increase in temperature

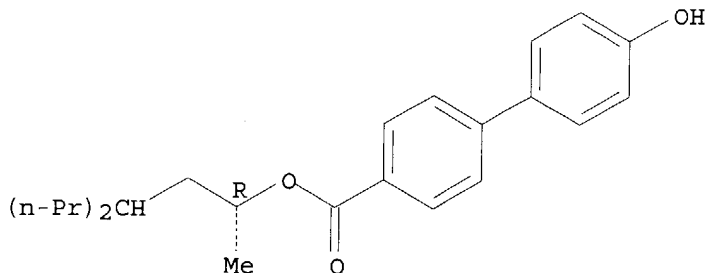
IT 676248-40-1P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(intermediates; optically active compds. as chiral dopants with large helical twisting power for LCD)

RN 676248-40-1 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1R)-1-methyl-3-propylhexyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L12 ANSWER 4 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:268551 CAPLUS

DN 140:312119

TI Optically active esters as chiral dopants for nematic liquid crystal compositions for liquid crystal displays

IN Motoyama, Hiroki; Aoki, Takashi; Kino, Masahiro

PA Mitsubishi Gas Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 14 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2004099555	A2	20040402	JP 2002-265656	20020911
PRAI	JP 2002-265656		20020911		

OS MARPAT 140:312119

AB The esters are PhCH<sub>2</sub>EtO<sub>2</sub>CXCO<sub>2</sub>CHMeR (R = C<sub>4</sub>-8 linear alkyl, CH<sub>2</sub>CH<sub>2</sub>Et<sub>2</sub>; X = PhCO<sub>2</sub>PhPh, PhPhO<sub>2</sub>CCy, PhO<sub>2</sub>CNpCO<sub>2</sub>Ph, etc.; Ph = 1,4-phenylene; Cy = 1,4-trans-cyclohexylene; Np = 2,6-naphthylene). Helical pitch of (super-)twisted-nematic liquid crystals are adjusted with low amount of the esters with no adverse effect, and the pitch becomes shorter in accordance with temperature increase.

IT 443682-49-3P

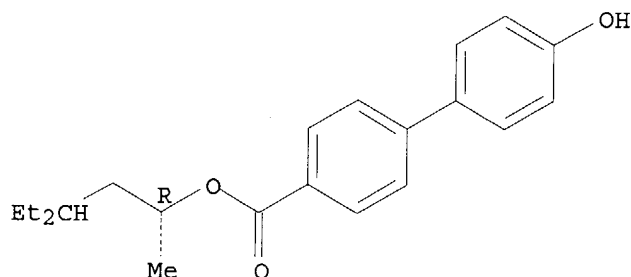
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(optically active esters as chiral dopants for nematic liquid crystal compns. for liquid crystal displays)

RN 443682-49-3 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1R)-3-ethyl-1-methylpentyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L12 ANSWER 5 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2004:35450 CAPLUS

DN 140:102117

TI Chiral compounds as dopants for liquid crystals

IN Motoyama, Yuki; Aoki, Takashi; Johno, Masahiro

PA Mitsubishi Gas Chemical Company, Inc., Japan

SO Eur. Pat. Appl., 15 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1380567	A1	20040114	EP 2003-14549	20030707
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
	JP 2004035525	A2	20040205	JP 2002-198697	20020708

PRAI JP 2002-198697 A 20020708

OS MARPAT 140:102117

AB The present invention relates to a optically active compound of the general formula:  $C_nH_{2n+1}CHCH_3-OOC-X-COO-CH(CH_3)CH_2CH(C_2H_5)_2$  ( $n = 4-8$ ;  $X =$  -Ph-COO-Ph-Ph-, -Ph-Ph-COO-Ph-, -Ph-OOC-Ph-Ph-, -Ph-Ph-OOC-Ph-, -Ph-Ph-Ph-, -Cy-COO-Ph-Ph-, -Ph-Ph-OOC-Cy-, -Ph-OOC-Ph-COO-Ph-, -Ph-OOC-Cy-COO-Ph-, -Ph-OOC-Np-COO-Ph-, -Np-OOC-Ph- or -Ph-COO-Np- in which Ph = 1,4-phenylene group; Cy = trans-1,4-cyclohexylene group; Np = 2,6-naphthylene group; C\* = asym. carbon), and a nematic liquid crystal composition containing the above optically active compound According to the present

invention, there is provided a nematic liquid crystal composition containing the optically active compound having a helical twisting power (HTP) of 10 or more and giving a chiral dopant for a nematic liquid crystal, which chiral dopant has a property that the pitch of its induced helix decreases in length with an increase in temperature

IT 443682-49-3P

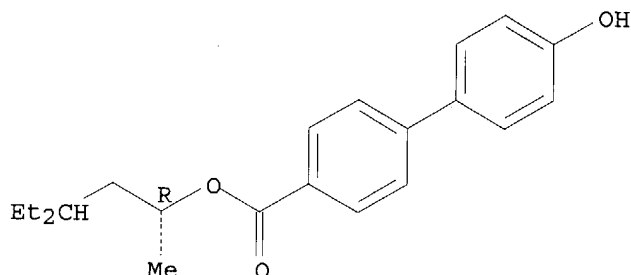
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(chiral compds. as dopants for liquid crystals)

RN 443682-49-3 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1R)-3-ethyl-1-methylpentyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 9 THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 6 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:931365 CAPLUS

DN 140:5078

TI Preparation of dipyridodiazepine non-nucleoside reverse transcriptase inhibitors

IN Simoneau, Bruno; Landry, Serge; Malenfant, Eric; Naud, Julie; O'meara, Jeffrey; Thavonekham, Bounkham; Yoakim, Christiane

PA Boehringer Ingelheim International GmbH, Germany

SO PCT Int. Appl., 79 pp.

CODEN: PIXXD2

DT Patent

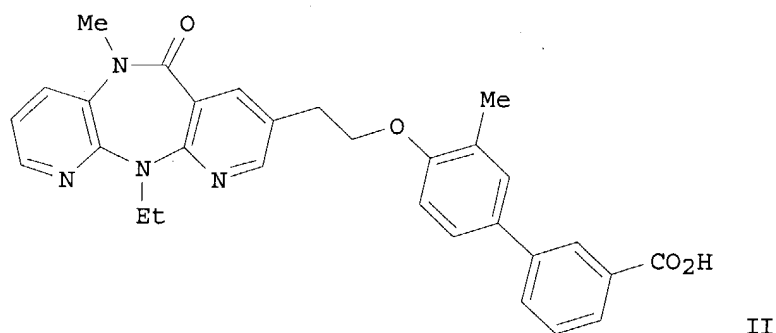
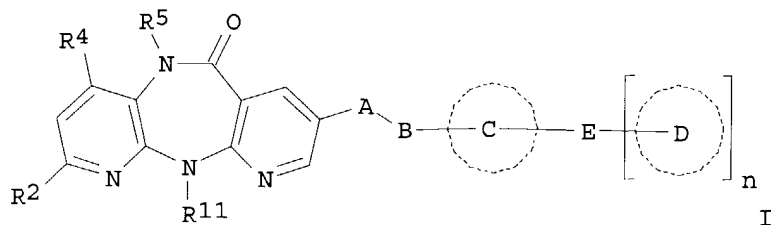
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003097644	A2	20031127	WO 2003-CA718	20030514
	WO 2003097644	A3	20040205		
W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,				

TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ,  
 MD, RU, TJ, TM  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG,  
 CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC,  
 NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ,  
 GW, ML, MR, NE, SN, TD, TG

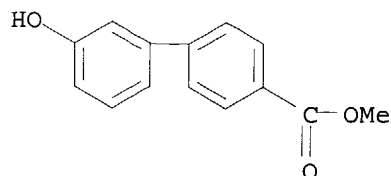
US 2004006071 A1 20040108 US 2003-430116 20030506  
 PRAI US 2002-380886P P 20020516  
 OS MARPAT 140:5078  
 GI



AB The title compds. [I; R2 = H, alkyl, halo, haloalkyl, OH, alkoxy, NH(alkyl) or N(alkyl)2; R4 = H, Me; R5 = H, Me; R11 = H, alkyl, cycloalkyl and alkylcycloalkyl; A = alkylene; B = O, S; n = 0-1; when n = 0, Ring C = (un)substituted 6-10 membered aryl, 5-6 membered heterocycle having from 1-4 heteroatoms selected from O, N, and S; E = CONR12R13 (R12, R13 = H, SO2alkyl, alkylCO2H, alkylcycloalkyl), CONHNR14R15 (R14, R15 = H, alkyl optionally substituted by CO2H), NR16COR17 (R16 = H, alkyl optionally substituted with CO2H, arylCO2H; R17 = alkenylCO2H, cycloalkylCO2H, NHalkylCO2H, etc.), NR18SO2alkyl (R18 = H, alkyl), SO2NR19R20 (R19 = H, alkyl; R20 = alkyl optionally substituted with CO2H), SO2R21 (R21 = alkyl); or when n = 1, Ring C is as defined above and E = a single bond or a connecting group; Ring D = (un)substituted 6-10 membered aryl, 5-6 membered heterocycle having from 1-4 heteroatoms selected from O, N, and S] or a salts or a prodrugs thereof, useful as inhibitors of HIV reverse transcriptase, were prepared. Thus, reacting 11-ethyl-5,11-dihydro-8-(2-hydroxyethyl)-5-methyl-6H-dipyrido[3,2-b:2',3'-e][1,4]diazepin-6-one with Me 4'-hydroxy-3'-methyl-[1,1'-biphenyl]-4-carboxylate (preparation given) in the presence of DEAD, PPh3 in THF followed by hydrolysis of the resulting ester afforded II which showed IC50 of <10 nM in wild type RT assay. Pharmaceutical composition for the treatment or prevention of HIV infection, comprising the compound I is claimed.

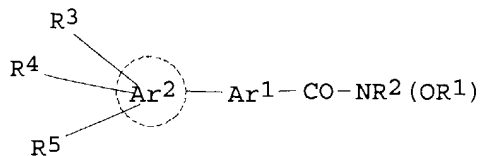
II 579511-01-6P, Methyl 3'-hydroxy-[1,1'-biphenyl]-4-carboxylate  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of dipyrindodiazepine non-nucleoside reverse transcriptase

inhibitors)  
 RN 579511-01-6 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 3'-hydroxy-, methyl ester (9CI) (CA  
 INDEX NAME)



L12 ANSWER 7 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:633649 CAPLUS  
 DN 139:179896  
 TI Preparation of biphenyl hydroxamic acids as inhibitors of histone  
 deacetylase useful against cancer  
 IN Leahy, Ellen M.; Verner, Erik J.  
 PA Axys Pharmaceuticals, USA  
 SO PCT Int. Appl., 135 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 2

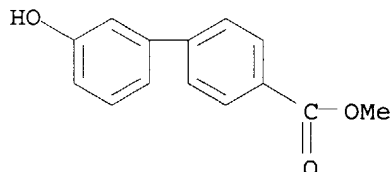
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003066579	A2	20030814	WO 2003-US3846	20030207
	WO 2003066579	A3	20031030		
	W:	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG			
	US 2004091951	A1	20040513	US 2003-360534	20030207
PRAI	US 2002-355700P	P	20020207		
OS	MARPAT 139:179896				
GI					



AB The present invention is directed to certain bicyclic hydroxamic acids (shown as I; variables defined below; e.g. N-hydroxy-4-(3-methoxyphenyl)benzamide) that are inhibitors of histone deacetylase (no data) and are therefore useful in the treatment of diseases associated with histone deacetylase activity. Pharmaceutical compns. (5 examples) and processes for preparing these compds. are also disclosed. For I: R1 is H or alkyl; R2 is H; Ar1 is phenylene or a six membered heteroarylene ring

containing one or two N ring atoms, the rest of the ring atoms being C; wherein said Ar1 group is (un)substituted with one or two alkyl, halo, hydroxy, alkoxy, haloalkoxy, or haloalkyl; Ar2 is aryl, benzimidazol-2-yl, cycloalkyl or heterocycloalkyl; R3 is H, alkyl, halo, hydroxy, or alkoxy. R4 and R5 = H, alkyl, halo, haloalkyl, nitro, cyano, carboxy, carboxyalkyl, alkoxycarbonyl, (un)substituted Ph, (un)substituted heteroaryl, (un)substituted heterocycloalkyl, cycloalkyl, heterocycloaminoalkyl, -X-R6, or -(C1-6alkylene)-Y-R7 where X and Y = -O-, -S-, -SO-, -SO2-, -NR8-, -CO-, -NR9CO-, -CONR10-, -NR11SO2-, -SO2NR12-, -NHC(O)O-, -OC(O)NH-, -NR13CONR14-, or -NR15SO2NR16-; addnl. details including provisos are given in the claims. Although the methods of preparation are not claimed, .apprx.20 example preps. of I are included.

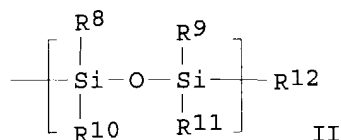
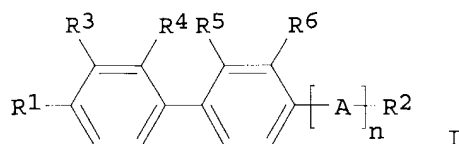
IT 579511-01-6P, Methyl 4-(3-hydroxyphenyl)benzoate  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation of biphenyl hydroxamates as inhibitors of histone deacetylase useful against cancer)  
 RN 579511-01-6 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 3'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)



L12 ANSWER 8 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 2003:376798 CAPLUS  
 DN 138:393143  
 TI Liquid crystalline compounds containing biphenyl core for liquid crystal mixtures and devices  
 IN Goodby, John William; Toyne, Kenneth Johnson; Hird, Michael; Dong, Chu Chuan; Richards, Robert Dadd Campling  
 PA Qinetiq Limited, UK  
 SO PCT Int. Appl., 54 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2003040074	A1	20030515	WO 2002-GB5045	20021107
	W: JP, KR, US				
	RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, SK, TR				
	GB 2396862	A1	20040707	GB 2004-8832	20021107
PRAI	GB 2001-26844	A	20011108		
	WO 2002-GB5045	W	20021107		
OS	MARPAT 138:393143				
GI					





AB Disclosed is a compound of formula I or its dimer (R1, R2 = alkyl; alkenyl; alkynyl; group of sub-formula (i):  $-(O)_m-(CH_2)_p-R_7$ , where  $m = 0, 1$ ;  $p = 1-12$ ,  $R_7 = -CqX_{2q+1}$ ,  $q = 1-12$ ,  $X = \text{fluoro}$ ; group of sub-formula II ( $k = 1-10$ ;  $R_8, R_9, R_{10}, R_{11}, R_{12} = \text{alkyl, alkenyl, aryl}$ ); provided that at least one of R1 or R2 is a group of sub-formula (i);  $R_3, R_4, R_5, R_6 = H$ , halogen; and in particular fluorine;  $n = 0-1$ ; A is a ring structure as specified further in the claims). Compds. of the formula I have a stabilized Smectic A phase and thus may be particularly useful in liquid crystal mixts. to either induce or generate a smectic A phase, or to provide for a wider temperature range smectic A phase for purposes of alignment or electronic devices. Also some inventive compds. in have inherently low viscosities making them suitable for ferroelec. mixts.

IT 526213-25-2

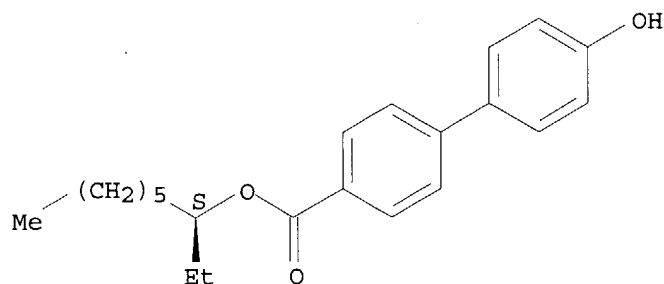
RL: RCT (Reactant); RACT (Reactant or reagent)

(preparation and properties of liquid crystalline compds. containing biphenyl core)

RN 526213-25-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1S)-1-ethylheptyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 13 THERE ARE 13 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 9 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2003:4854 CAPLUS

DN 138:80793

TI Optically active compound with large helical twisting power for nematic liquid crystal composition and display

IN Norisue, Yasumasa; Ogi, Yasue; Johno, Masahiro

PA Mitsubishi Gas Chemical Company, Inc., Japan

SO Eur. Pat. Appl., 13 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.

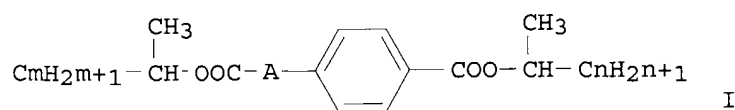
KIND

DATE

APPLICATION NO.

DATE

PI EP 1270542 A1 20030102 EP 2002-13956 20020625  
 R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
 IE, SI, LT, LV, FI, RO, MK, CY, AL, TR  
 JP 2003012610 A2 20030115 JP 2001-192486 20010626  
 US 2003124268 A1 20030703 US 2002-178233 20020625  
 PRAI JP 2001-192486 A 20010626  
 OS MARPAT 138:80793  
 GI



AB Disclosed is an optically active compound having large helical twisting power, of the general formula I (m, n = 4-8; A = -Ph-COO-Ph-, -Ph-Ph-COO-, -Cy-COO-Ph-, -Ph-OOC-Ph-COO-, -Ph-OOC-Cy-COO-, Ph-OOC-Np-COO-, -Np-OOC-; Ph = 1,4-phenylene; Cy = trans-1,4-cyclohexylene; Np = 2,6-naphthylene; C\* = asym. carbon) for nematic liquid crystal composition and liquid crystal display.

Having a helical twisting power (HTP) of at least 9 and having a property that the helical pitch induced decreases with an increase in temperature, the optically active compound of the present invention has an excellent value as a chiral dopant for a nematic liquid crystal and display.

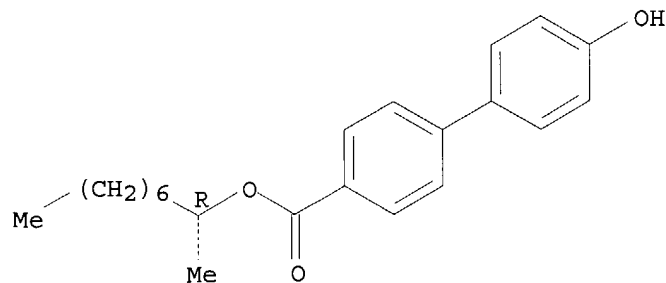
IT 479629-79-3P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (in preparation of optically active compds.)

RN 479629-79-3 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1R)-1-methyloctyl ester  
 (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 10 THERE ARE 10 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 10 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2002:792144 CAPLUS

DN 137:318024

TI Nematic liquid crystal composition containing optically active compound for liquid crystal display

IN Norisue, Yasumasa; Mine, Takakiyo; Johno, Masahiro

PA Mitsubishi Gas Chemical Company, Inc., Japan

SO Eur. Pat. Appl., 19 pp.

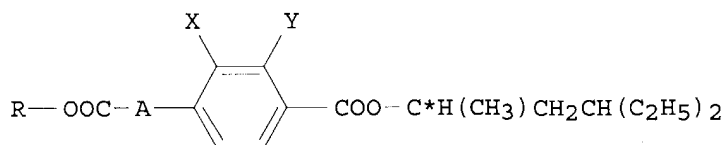
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

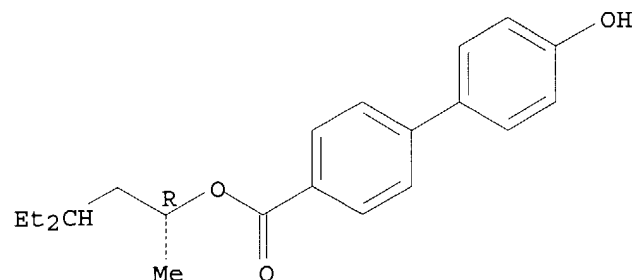
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1249484	A1	20021016	EP 2002-8128	20020411
	EP 1249484	B1	20040128		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002308833	A2	20021023	JP 2001-115602	20010413
	JP 2002322135	A2	20021108	JP 2001-126990	20010425
	US 2003054119	A1	20030320	US 2002-118431	20020409
	US 6730371	B2	20040504		
	CN 1381438	A	20021127	CN 2002-105718	20020415
PRAI	JP 2001-115602	A	20010413		
	JP 2001-126990	A	20010425		
OS	MARPAT 137:318024				
GI					



AB Disclosed is an optically active compound of the following general formula I (X, Y = H, F, R = (C<sub>2</sub>H<sub>5</sub>)<sub>2</sub>CHCH<sub>2</sub>C\*H(CH<sub>3</sub>)-, Ph-C\*H(CH<sub>3</sub>)-, A = -Ph(W)-COO-Ph-, -Ph-Ph-COO-, -Cy-COO-Ph-, -Ph(W)-OOC-Ph-COO-, -Ph(W)-OOC-Cy-COO-, -Ph(W)-OOC-Np-COO-, -Np-OOC-, Ph- = Ph group, -Ph- = 1,4-phenylene group, -Ph(W)- = -Ph-, monofluoro substituted -Ph-, Cy- = trans-1,4-cyclohexylene, Np = 2,6-naphthylene, C\* = an asym. carbon) useful as a chiral dopant in nematic liquid crystal compns. The optically active compound of the present invention has a large helical twisting power (HTP) of at least 14 and suitably has the property that its induced helical pitch decreases in length with an increase in temperature, so that it has an excellent value as a chiral dopant for a nematic liquid crystal composition used in liquid crystal displays.

IT **443682-49-3P**  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (in preparation of optically active compound)  
 RN 443682-49-3 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1R)-3-ethyl-1-methylpentyl ester (9CI) (CA INDEX NAME)

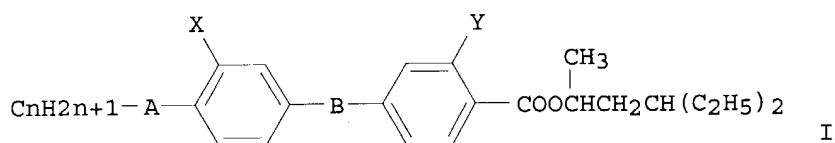
Absolute stereochemistry.



RE.CNT 11 THERE ARE 11 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 11 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 2002:553112 CAPLUS  
DN 137:117023  
TI Optically active compounds with high helical twisting power for nematic liquid crystal compositions and display  
IN Norisue, Yasumasa; Mine, Takakiyo; Johno, Masahiro  
PA Mitsubishi Gas Chemical Company, Inc., Japan  
SO Eur. Pat. Appl., 26 pp.  
CODEN: EPXXDW  
DT Patent  
LA English  
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 1225212	A1	20020724	EP 2002-1076	20020122
	EP 1225212	B1	20040324		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2002212145	A2	20020731	JP 2001-13247	20010122
	JP 2002338527	A2	20021127	JP 2001-153467	20010523
	JP 2002338526	A2	20021127	JP 2001-153468	20010523
	US 2002146517	A1	20021010	US 2002-46902	20020117
	US 6677475	B2	20040113		
PRAI	JP 2001-13247	A	20010122		
	JP 2001-153467	A	20010523		
	JP 2001-153468	A	20010523		
OS	MARPAT 137:117023				
GI					



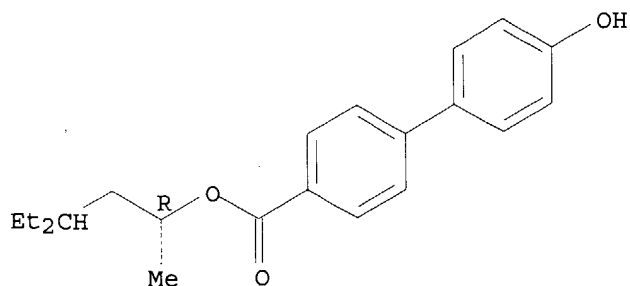
AB Disclosed are optically active compds. of the following general formula I  
(n = 0-5, provided that when n = 0, A is a single bond and when n = 1-5, A is a single bond, -O-, -COO-, -Cy-, -Cy-COO-; -Cy- = trans-1,4-cyclohexylene; X, Y = H, fluorine; B = single bond, -COO-, -COO-Ph-, -Ph-COO-; Ph = 1,4-phenylene group; C\* = asym. carbon) useful as chiral dopants. The chiral dopant of the present invention have a high helical twisting power of at least 9 and suitably have a feature that the helical pitch induced by them decreases in length with an increase in temperature so that they are advantageous for use in a nematic liquid crystal composition

IT **443682-49-3P**  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(in preparation of optically active compds.)

RN 443682-49-3 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1R)-3-ethyl-1-methylpentyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



RE.CNT 12 THERE ARE 12 CITED REFERENCES AVAILABLE FOR THIS RECORD  
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 12 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2001:396843 CAPLUS

DN 135:5437

TI Preparation and formulation of vitamin D analogs for pharmaceutical and cosmetic use

IN Bernardon, Jean-michel; Biadatti, Thibaud

PA Galderma Research & Development, S.N.C., Fr.

SO PCT Int. Appl., 79 pp.

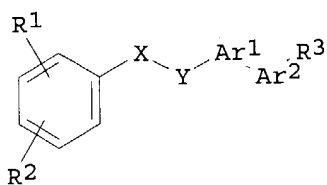
CODEN: PIXXD2

DT Patent

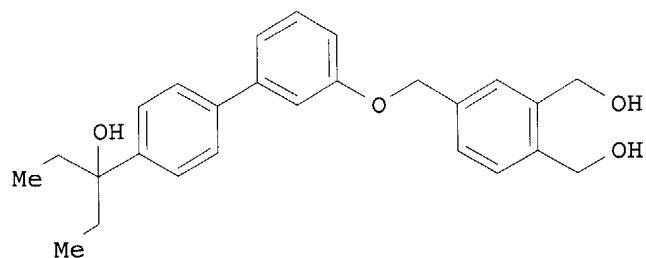
LA French

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2001038303	A2	20010531	WO 2000-FR3249	20001122
	WO 2001038303	A3	20020117		
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				
	CR, CU, CZ, DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,				
	HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT,				
	LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD,				
	SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU,				
	ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY,				
	DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF,				
	BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	FR 2801305	A1	20010525	FR 1999-14781	19991124
	FR 2801305	B1	20021206		
	AU 2001025222	A5	20010604	AU 2001-25222	20001122
	AU 767399	B2	20031106		
	BR 2000015924	A	20020806	BR 2000-15924	20001122
	EP 1235777	A2	20020904	EP 2000-988868	20001122
	EP 1235777	B1	20040616		
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
	IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
	JP 2003514892	T2	20030422	JP 2001-539859	20001122
	AT 269289	E	20040715	AT 2000-988868	20001122
	ZA 2002003475	A	20030401	ZA 2002-3475	20020502
PRAI	FR 1999-14781	A	19991124		
	WO 2000-FR3249	W	20001122		
OS	MARPAT 135:5437				
GI					



I



II

AB Vitamin D analogs, such as I [R1 = H, Me, hydroxyalkyl, acyloxyalkyl, etc.; R2, R3 = hydroxyalkyl, acyloxyalkyl, etc.; X, Y = connecting group, such as alkylene, alkenylene, alkynylene, phenylene, heteroarylene, etc.; Ar1, Ar2 = aromatic connecting group, such as phenylene or heteroarylene], were prepared as vitamin D receptor agonists for cosmetic and pharmaceutical use in the treatment of dermatol. and immunol. conditions, such as inflammation, acne, psoriasis, seborrhea, transplant rejection, cancer, etc. Thus, benzenedimethanol II was prepared in a multistep synthetic sequence starting from 1,2,4-benzenetricarboxylic anhydride, 3-bromophenol, and Et 4-iodobenzoate. The prepared vitamin D analogs were tested for vitamin D receptor agonist activity.

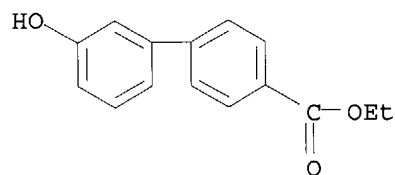
IT 220950-34-5P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and formulation of vitamin D receptor agonists for cosmetic and pharmaceutical use)

RN 220950-34-5 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 3'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



L12 ANSWER 13 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AN 2000:765222 CAPLUS

DN 133:327705

TI Reversible thermal printing material and printing medium

IN Nishioka, Yoichi; Okada, Yukihi

PA Oki Electric Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 6 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

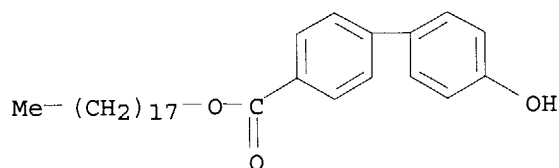
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2000301834	A2	20001031	JP 1999-111196	19990419
PRAI	JP 1999-111196		19990419		

AB The material, containing an electron-donating color former and an electron-accepting compound and utilizing coloration between the both, employs a [4-(4-hydroxyphenyl)benzoic acid] alkylamine or [4-(4-hydroxyphenyl)benzoic acid] alkyl ester for the electron-accepting compound. The medium possesses a reversible recording layer made of the material on a support. The medium provides high contrast images reversibly.

IT **303009-09-8**  
 RL: DEV (Device component use); USES (Uses)  
 (reversible thermal printing material containing hydroxyphenyl benzoic acid derivative color developer)

RN 303009-09-8 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, octadecyl ester (9CI) (CA INDEX NAME)



L12 ANSWER 14 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1999:166584 CAPLUS

DN 130:209513

TI Biphenyl derivatives substituted by an aromatic or heteroaromatic radical for use in treating keratinization disorders

IN Bernardon, Jean-Michel; Nedoncelle, Philippe

PA Galderma Research & Development, Fr.

SO PCT Int. Appl., 129 pp.  
 CODEN: PIXXD2

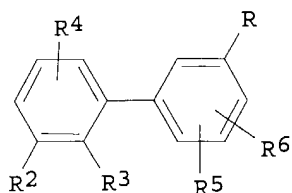
DT Patent

LA French

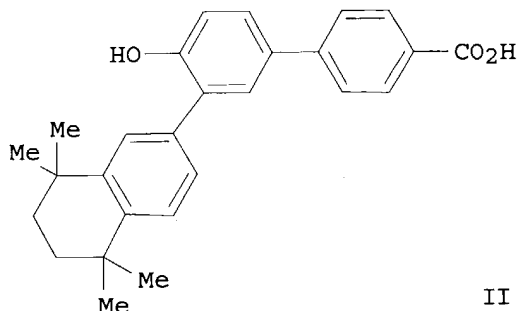
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 9910308	A1	19990304	WO 1998-FR1834	19980821
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	RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	FR 2767525	A1	19990226	FR 1997-10552	19970821
	FR 2767525	B1	19991112		
	AU 9890781	A1	19990316	AU 1998-90781	19980821
	AU 740840	B2	20011115		
	BR 9806146	A	19991026	BR 1998-6146	19980821
	EP 952974	A1	19991103	EP 1998-942767	19980821
	EP 952974	B1	20011121		
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				
	TR 9901188	T1	20000221	TR 1999-9901188	19980821
	NZ 334961	A	20000428	NZ 1998-334961	19980821
	JP 2001504139	T2	20010327	JP 1999-514010	19980821
	AT 209177	E	20011215	AT 1998-942767	19980821
	ES 2167931	T3	20020516	ES 1998-942767	19980821
	PT 952974	T	20020531	PT 1998-942767	19980821
	RU 2193552	C2	20021127	RU 1999-109983	19980821

US 6316009	B1	20011113	US 1999-284026	19990406
NO 9901834	A	19990603	NO 1999-1834	19990416
MX 9903653	A	20000531	MX 1999-3653	19990420
US 6649612	B1	20031118	US 2001-932938	20010821
US 2004030141	A1	20040212	US 2003-613320	20030707
PRAI FR 1997-10552	A	19970821		
WO 1998-FR1834	W	19980821		
US 1999-284026	A3	19990406		
US 2001-932938	A3	20010821		
OS MARPAT 130:209513				
GI				



I



II

AB Title compds. I [R = (un)substituted aromatic, heteroarom.; R2, R3 = H, alkyl, etc.; R2R3 together form a 5- or 6-membered ring; R4, R5 = H, halogen, etc.; R6 = H, alkyl, etc.] were prepared for use in treating dermatol. diseases related to keratinization, and to combat skin ageing (no data). Thus, the acid II was prepared from the bromonaphthalene and the hydroxyphenylbenzoate fragments in 5 steps.

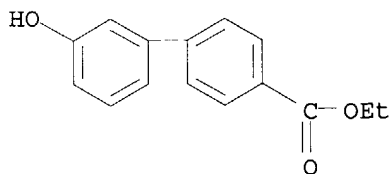
IT 220950-34-5P 220950-37-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation of terphenyl derivs. for treating keratinization disorders)

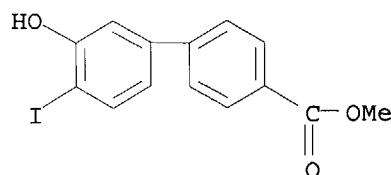
RN 220950-34-5 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 3'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



RN 220950-37-8 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 3'-hydroxy-4'-iodo-, methyl ester (9CI) (CA INDEX NAME)



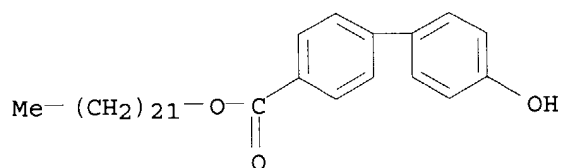


ALL CITATIONS AVAILABLE IN THE RE FORMAT

L12 ANSWER 15 OF 15 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1998:411066 CAPLUS  
 DN 129:68204  
 TI Induction of Thermotropic Liquid Crystalline Phases in Coil-Rod-Coil Triblock Molecules Containing Poly(propylene oxide) through Complexation with LiCF<sub>3</sub>SO<sub>3</sub>  
 AU Lee, Myongsoo; Cho, Byoung-Ki  
 CS Department of Chemistry, Yonsei University, Seoul, 120-749, S. Korea  
 SO Chemistry of Materials (1998), 10(7), 1894-1903  
 CODEN: CMATEX; ISSN: 0897-4756  
 PB American Chemical Society  
 DT Journal  
 LA English  
 AB The preparation and thermotropic phase behavior of coil-rod-coil triblock mols. of dodecyl 4-(4-oxy-4'-biphenylcarbonyloxy)-4'-biphenylcarboxylate with poly(propylene oxide) of seven (7-22) and twelve (12-22) propylene oxide subunits and the complexes of the triblock mols. with LiCF<sub>3</sub>SO<sub>3</sub> are presented. Both 7-22 and 12-22 appear to be crystalline solids. However, the complexation of 7-22 and 12-22 with LiCF<sub>3</sub>SO<sub>3</sub> induces an enantiotropic liquid crystalline phase. The complexes of 7-22 with 0.05-0.20 mol of LiCF<sub>3</sub>SO<sub>3</sub> per propylene oxide unit exhibit an enantiotropic smectic A mesophase. In contrast, a significant phase change is observed upon complexation of 12-22 with LiCF<sub>3</sub>SO<sub>3</sub>. The complex of 12-22 with 0.10 mol of LiCF<sub>3</sub>SO<sub>3</sub> exhibits a smectic A mesophase. However, the complexes with 0.15-0.30 mol of LiCF<sub>3</sub>SO<sub>3</sub> display a hexagonal columnar mesophase. The thermal stability of the mesophase exhibited by the Li complexes based on each triblock mol. increases with increasing salt concentration This behavior is attributed to the dynamics of ionic association resulting from specific interactions between the ether oxygens and the cations. These results, characterized by a combination of techniques consisting of differential scanning calorimetry, thermal optical microscopy, and Raman spectroscopy, are discussed.

IT **209126-69-2P**  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (intermediate; induction of thermotropic liquid crystalline phases in coil-rod-coil triblock mols. containing poly(propylene oxide) through complexation with lithium triflate)

RN 209126-69-2 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, docosyl ester (9CI) (CA INDEX NAME)



RE.CNT 26 THERE ARE 26 CITED REFERENCES AVAILABLE FOR THIS RECORD  
 ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> d his

(FILE 'HOME' ENTERED AT 06:56:17 ON 16 SEP 2004)

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L1 STRUCTURE UPLOADED  
L2 0 S L1  
L3 0 S L1 CSS  
L4 STRUCTURE UPLOADED  
L5 0 S L4  
L6 STRUCTURE UPLOADED  
L7 1 S L6  
L8 0 S L1 CSS  
L9 0 S L1 CSS FUL  
L10 1 S L6  
L11 11 S L6 CSS FUL

FILE 'CAPLUS' ENTERED AT 07:31:13 ON 16 SEP 2004

L12 15 S L11  
S L6

FILE 'REGISTRY' ENTERED AT 07:34:46 ON 16 SEP 2004

L13 1 S L6

FILE 'CAPLUS' ENTERED AT 07:34:47 ON 16 SEP 2004

L14 1 S L13

FILE 'REGISTRY' ENTERED AT 07:36:20 ON 16 SEP 2004

L15 SCREEN 973 OR 1992 OR 2007 OR 2016 OR 2021  
L16 STRUCTURE UPLOADED  
L17 QUE L16 NOT L15  
L18 1 S L17 CSS  
L19 56 S L17 CSS FUL

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L20 280 S L19

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L21 SCREEN 1992 OR 2007 OR 2016 OR 2021 OR 2026  
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L23 QUE L22 NOT L21  
L24 0 SEARCH L22 CSS SUB=L19 FULL

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L25 0 S L22  
L26 0 S CSS L23  
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L29 0 S L23 CSS FUL  
L30 SCREEN 1841 OR 1992 OR 2007 OR 2016 OR 2021 OR 2026  
L31 STRUCTURE UPLOADED  
L32 QUE L31 NOT L30  
L33 0 S L32  
L34 2 S L32 FUL

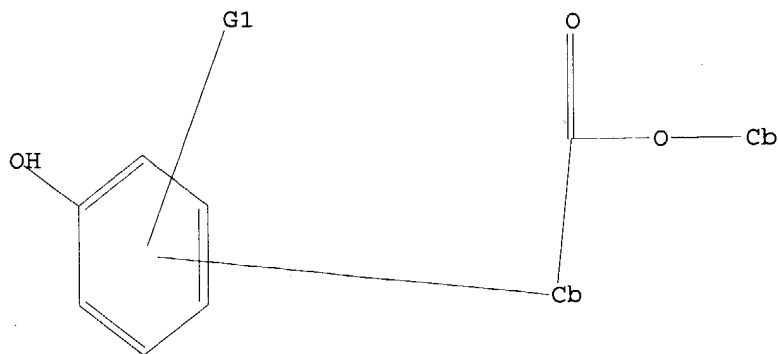
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L35 2 S L34

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L31 HAS NO ANSWERS

L31 STR



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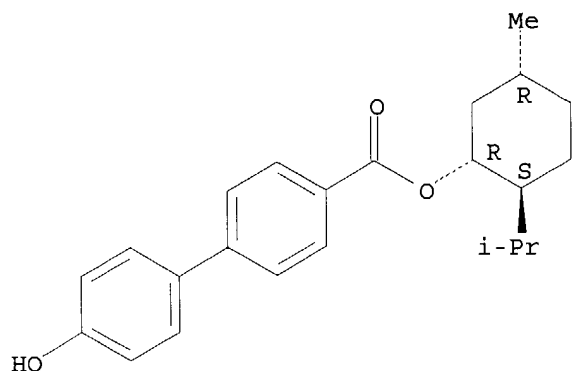
G2 Cb,Ak

Structure attributes must be viewed using STN Express query preparation.

=> d bib abs hitstr 1-2

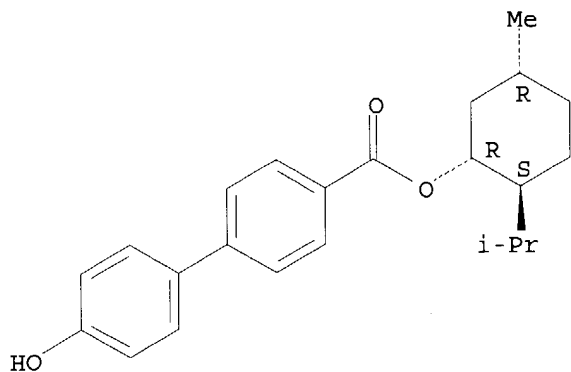
L35 ANSWER 1 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1999:334488 CAPLUS  
 DN 131:102970  
 TI Cholesteric mesophase induced in hydrogen-bonded polymer blends with low-molecular weight chiral additives  
 AU Barmatov, E. B.; Bobrovskii, A. Yu.; Barmatova, M. V.; Shibaev, V. P.  
 CS Department of Chemistry, Moscow State University, Moscow, MOSCOW, Russia  
 SO Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (1998), 40(11), 1769-1780  
 CODEN: VSSBEE; ISSN: 1023-3091  
 PB MAIK Nauka  
 DT Journal  
 LA Russian  
 AB Formation of a cholesteric mesophase in hydrogen-bonded complexes based on comb-shaped LC copolymers containing alkoxy-4-hydroxybenzoic acid (proton donor) fragments and 4-pyridinecarboxylic acid chiral derivs. (proton acceptor) was studied. It was found that blends containing 1-25 mol % of an optically active additive form a chiral nematic phase. The temperature dependences of the selective light reflection wavelength were investigated, and the helical induction power was found to vary from 12.1 to 20.5  $\mu\text{m}^{-1}$  depending on the structure of the nematic polymer matrix and the length of the rigid aromatic fragment of chiral additive. With respect to the combination of optical properties, the chiral nematic phase in hydrogen-bonded complexes does not rank below the classical cholesteric copolymers, in which a chiral group is covalently attached to the polymer chain.  
 IT 197500-88-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactant in additive preparation; cholesteric mesophase induced in hydrogen-bonded polymer blends with low-mol. weight chiral additives)  
 RN 197500-88-2 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1R,2S,5R)-5-methyl-2-(1-methylethyl)cyclohexyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



L35 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1997:655657 CAPLUS  
 DN 127:307889  
 TI New menthyl-containing copolymers forming chiral nematic phases  
 AU Bobrovskii, A. Yu.; Boiko, N. I.; Shibaev, V. R.  
 CS Dep. Khim., Mosk. Gos. Univ., Moscow, 119899, Russia  
 SO Vysokomolekulyarnye Soedineniya, Seriya A i Seriya B (1997), 39(5),  
 798-808  
 CODEN: VSSBEE; ISSN: 1023-3091  
 PB MAIK Nauka  
 DT Journal  
 LA Russian  
 AB New menthyl-containing chiral homo- and copolymers were synthesized. The correlations between the structure of a chiral monomer and the phase behavior and optical properties of the homo- and copolymers were determined. The conditions for formation of a new chiral NB\* phase were found and its optical properties were studied.  
 IT **197500-88-2P**, 1-Menthyl 4-hydroxy-1,1'-biphenyl-4'-carboxylate  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (monomer synthesis; preparation, optical, and thermal characterization of side chain menthyl-containing vinyl polymers forming chiral nematic phases)  
 RN 197500-88-2 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1R,2S,5R)-5-methyl-2-(1-methylethyl)cyclohexyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry.



=>

=> d his

(FILE 'HOME' ENTERED AT 06:56:17 ON 16 SEP 2004)

FILE 'REGISTRY' ENTERED AT 06:56:32 ON 16 SEP 2004

L1           STRUCTURE UPLOADED  
L2           0 S L1  
L3           0 S L1 CSS  
L4           STRUCTURE UPLOADED  
L5           0 S L4  
L6           STRUCTURE UPLOADED  
L7           1 S L6  
L8           0 S L1 CSS  
L9           0 S L1 CSS FUL  
L10          1 S L6  
L11          11 S L6 CSS FUL

FILE 'CAPLUS' ENTERED AT 07:31:13 ON 16 SEP 2004

L12          15 S L11  
              S L6

FILE 'REGISTRY' ENTERED AT 07:34:46 ON 16 SEP 2004

L13          1 S L6

FILE 'CAPLUS' ENTERED AT 07:34:47 ON 16 SEP 2004

L14          1 S L13

FILE 'REGISTRY' ENTERED AT 07:36:20 ON 16 SEP 2004

L15          SCREEN 973 OR 1992 OR 2007 OR 2016 OR 2021  
L16          STRUCTURE UPLOADED  
L17          QUE L16 NOT L15  
L18          1 S L17 CSS  
L19          56 S L17 CSS FUL

FILE 'CAPLUS' ENTERED AT 07:37:04 ON 16 SEP 2004

L20          280 S L19

FILE 'REGISTRY' ENTERED AT 07:40:27 ON 16 SEP 2004

L21          SCREEN 1992 OR 2007 OR 2016 OR 2021 OR 2026  
L22          STRUCTURE UPLOADED  
L23          QUE L22 NOT L21  
L24          0 SEARCH L22 CSS SUB=L19 FULL

FILE 'BEILSTEIN' ENTERED AT 07:41:20 ON 16 SEP 2004

L25          0 S L22  
L26          0 S CSS L23  
L27          0 S CSS L23 FUL

FILE 'REGISTRY' ENTERED AT 07:43:01 ON 16 SEP 2004

L28          0 S L23 CSS  
L29          0 S L23 CSS FUL  
L30          SCREEN 1841 OR 1992 OR 2007 OR 2016 OR 2021 OR 2026  
L31          STRUCTURE UPLOADED  
L32          QUE L31 NOT L30  
L33          0 S L32  
L34          2 S L32 FUL

FILE 'CAPLUS' ENTERED AT 07:51:40 ON 16 SEP 2004

L35          2 S L34

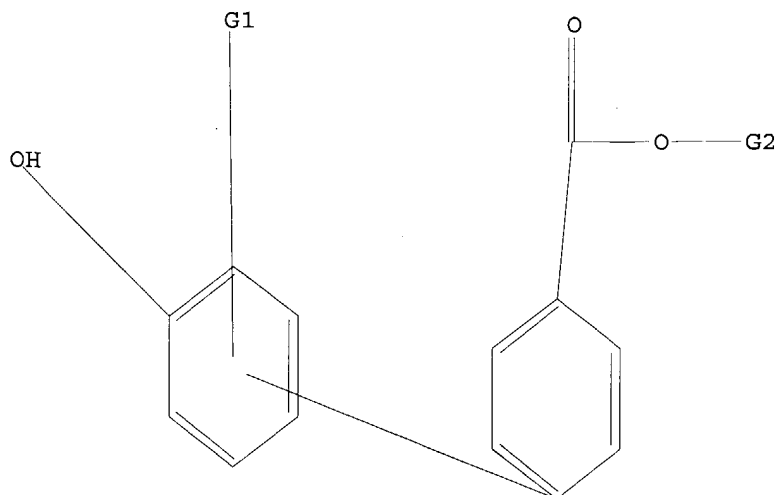
FILE 'BEILSTEIN' ENTERED AT 07:52:35 ON 16 SEP 2004

L36          0 S L32 FUL

=> d l16

L16 HAS NO ANSWERS

L16 STR



G1 X,H

G2 Cb,Ak

Structure attributes must be viewed using STN Express query preparation.

=> d bib abs histr 240-280 l20

'HISTR' IS NOT A VALID FORMAT FOR FILE 'CAPLUS'

The following are valid formats:

ABS	-----	GI and AB
ALL	-----	BIB, AB, IND, RE
APPS	-----	AI, PRAI
BIB	-----	AN, plus Bibliographic Data and PI table (default)
CAN	-----	List of CA abstract numbers without answer numbers
CBIB	-----	AN, plus Compressed Bibliographic Data
DALL	-----	ALL, delimited (end of each field identified)
DMAX	-----	MAX, delimited for post-processing
FAM	-----	AN, PI and PRAI in table, plus Patent Family data
FBIB	-----	AN, BIB, plus Patent FAM
IND	-----	Indexing data
IPC	-----	International Patent Classifications
MAX	-----	ALL, plus Patent FAM, RE
PATS	-----	PI, SO
SAM	-----	CC, SX, TI, ST, IT
SCAN	-----	CC, SX, TI, ST, IT (random display, no answer numbers; SCAN must be entered on the same line as the DISPLAY, e.g., D SCAN or DISPLAY SCAN)
STD	-----	BIB, IPC, and NCL
IABS	-----	ABS, indented with text labels
IALL	-----	ALL, indented with text labels
IBIB	-----	BIB, indented with text labels
IMAX	-----	MAX, indented with text labels
ISTD	-----	STD, indented with text labels

OBIB ----- AN, plus Bibliographic Data (original)  
 OIBIB ----- OBIB, indented with text labels

SBIB ----- BIB, no citations  
 SIBIB ----- IBIB, no citations

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 HITIND ----- IC, ICA, ICI, NCL, CC and index field (ST and IT)  
                   containing hit terms  
 HITRN ----- HIT RN and its text modification  
 HITSTR ----- HIT RN, its text modification, its CA index name, and  
                   its structure diagram  
 HITSEQ ----- HIT RN, its text modification, its CA index name, its  
                   structure diagram, plus NTE and SEQ fields  
 FHITSTR ----- First HIT RN, its text modification, its CA index name, and  
                   its structure diagram  
 FHITSEQ ----- First HIT RN, its text modification, its CA index name, its  
                   structure diagram, plus NTE and SEQ fields  
 KWIC ----- Hit term plus 20 words on either side  
 OCC ----- Number of occurrence of hit term and field in which it occurs

To display a particular field or fields, enter the display field codes. For a list of the display field codes, enter HELP DFIELDS at an arrow prompt (=>). Examples of formats include: TI; TI,AU; BIB,ST; TI,IND; TI,SO. You may specify the format fields in any order and the information will be displayed in the same order as the format specification.

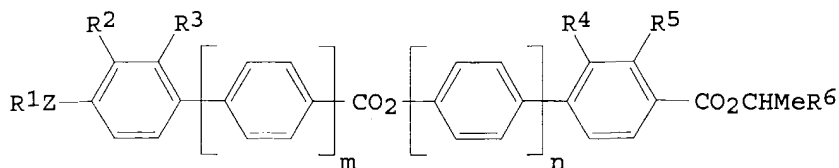
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ENTER DISPLAY FORMAT (BIB):end

=> d bib abs hitstr 240-280 l20

L20 ANSWER 240 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:448700 CAPLUS  
 DN 111:48700  
 TI Optically active benzoate ester liquid crystals  
 IN Takehara, Sadao; Fujisawa, Noburu; Ogawa, Hiroshi; Osawa, Masashi; Shoji, Tadao  
 PA Dainippon Ink and Chemicals, Inc., Japan; Kawamura Physical and Chemical Research Institute  
 SO Jpn. Kokai Tokkyo Koho, 5 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	JP 63250348	A2	19881018	JP 1987-84832	19870408
	JP 07084415	B4	19950913		
PRAI	JP 1987-84832		19870408		
OS	MARPAT 111:48700				
GI					



AB Optically active title compds. I [R1 = (S)-2-methylbutyl; Z = O, (CH2)x; x = 0-5; m, n = 0.1; R2-R5 = H or 1 of R2 and R3, 1 of R4 and R5 = F and the other = H; R6 = C2-16 alkyl; the chiral center C has either R- or S-configuration] are prepared as liquid crystals. Esterification of 4-[(S)-EtMeCHCH2]C6H4COCl [prepared from 4-HOC6H4CO2Me and (S)-EtMeCHCH2OSO2C6H4Me-4] with (R)-1-methylheptyl 4'-hydroxybiphenyl-4-carboxylate [prepared by acetylation of p-(p-HOC6H4)C6H4CO2H, conversion to the resultant p-(AcOC6H4)C6H4CO2H to the acid chloride, esterification with (R)-2-octanol, and deacetylation] gave I [R1Z = (S)-EtMeCHCH2O; R2-R5 = H; m = 0; n = 1; R6MeCH = (R)-1-methylheptyl], which showed transition temps. of crystallization and smectic A at 68° and 79.5°, resp.

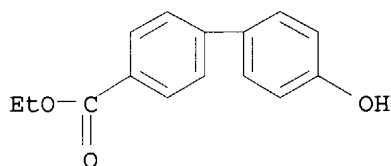
IT 50670-76-3P 121687-76-1P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in preparation of optically active benzoate ester liquid crystals)

RN 50670-76-3 CAPLUS

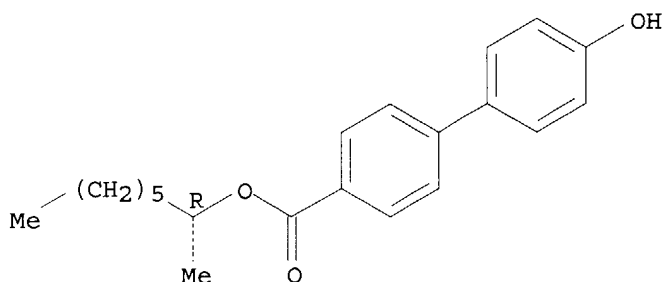
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



RN 121687-76-1 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1R)-1-methylheptyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (+).



L20 ANSWER 241 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1989:448284 CAPLUS

DN 111:48284

TI Liquid-crystal composition and a liquid-crystal device containing it  
IN Shinjo, Kenji; Terada, Masahiro; Uchimi, Toshiharu; Yoshida, Akio; Togano, Takeshi; Asaoka, Masanobu; Iwaki, Takashi

PA Canon K. K., Japan

SO Eur. Pat. Appl., 110 pp.

CODEN: EPXXDW

DT Patent

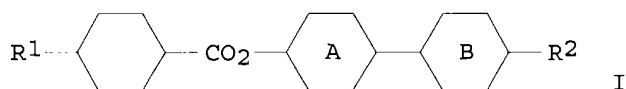
LA English

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
-----	-----	-----	-----	-----



PI	EP 293910	A2	19881207	EP 1988-108909	19880603
	EP 293910	A3	19900117		
	EP 293910	B1	19940202		
	R: DE, FR, GB, IT, NL				
	JP 63304087	A2	19881212	JP 1987-140645	19870604
	JP 01079292	A2	19890324	JP 1988-132152	19880530
	JP 06029424	B4	19940420		
	EP 541509	A2	19930512	EP 1993-100329	19880603
	EP 541509	A3	19930630		
	R: DE, FR, GB, IT, NL				
	US 5389296	A	19950214	US 1992-980116	19921123
	US 5482652	A	19960109	US 1994-266472	19940627
PRAI	JP 1987-140645		19870604		
	JP 1987-142023		19870605		
	JP 1988-132152		19880530		
	US 1988-201183		19880602		
	US 1992-980116		19921123		
GI					



AB To increase the response speed and decrease the temperature dependence of the response speed of a ferroelec. chiral smectic liquid-crystal composition, the composition contains  $\geq 1$  mesomorphic compound I, where R1 = C1-16 alkyl, which may be substituted; R2 = C1-16 alkyl, alkoxy, alkoxycarbonyl, acyloxy, or alkoxycarbonyloxy, which may be substituted; and rings A and B = 1,4-phenylene, 5,2-pyrimidinylene, 2,5-pyrazinylene, or 1,4-cyclohexylene, which may be substituted.

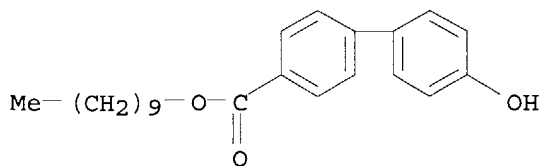
IT **116495-55-7**

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, in formation of mesomorphic compds. for ferroelec. chiral smectic liquid-crystal compns.)

RN 116495-55-7 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, decyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 242 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1989:431749 CAPLUS

DN 111:31749

TI A ferroelectric liquid-crystal polymeric composition

IN Morita, Kazuhara; Uchida, Shunji; Yuasa, Kimihiro

PA Idemitsu Kosan Co., Ltd., Japan

SO Eur. Pat. Appl., 23 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

PATENT NO.

KIND

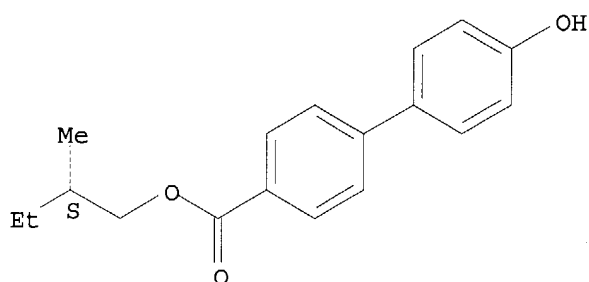
DATE

APPLICATION NO.

DATE

PI EP 310081 A2 19890405 EP 1988-116100 19880929  
 EP 310081 A3 19900328  
 R: BE, CH, DE, FR, GB, IT, LI, NL, SE  
 JP 01198683 A2 19890810 JP 1988-234739 19880921  
 US 4988460 A 19910129 US 1990-539321 19900613  
 PRAI JP 1987-249209 19871002  
 US 1988-243425 19880912  
 AB The composition includes a non-liquid-crystal polymeric compound having a proton donor, a proton acceptor, or their combination in the mol. structure, and a low-mol.-weight liquid-crystal compound having a proton donor, a proton acceptor, or their combination in the mol. structure and having a chiral smectic C phase. The formation of H-bonds between the functional groups prevents phase separation. The composition has good stability and uniformity and high-speed response in display devices.  
 IT **91577-91-2P**  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
 (preparation and reaction of, in formation of ferroelec. liquid-crystal polymeric compns.)  
 RN 91577-91-2 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

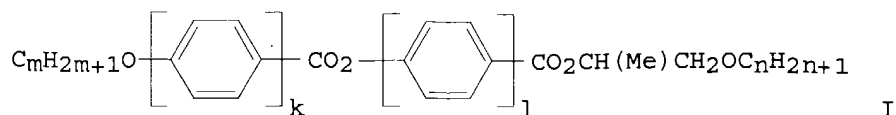
Absolute stereochemistry. Rotation (-).



L20 ANSWER 243 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:431746 CAPLUS  
 DN 111:31746  
 TI Liquid-crystal compounds, their intermediates, and their preparation  
 IN Ishibashi, Shigeki; Nakamura, Kouzaburo; Maruno, Tohru; Nakahata, Masaaki; Negishi, Takaaki; Urano, Fumiyoshi  
 PA Wako Pure Chemical Industries, Ltd., Japan; Nippon Telegraph and Telephone Public Corp.  
 SO Eur. Pat. Appl., 34 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 301587	A1	19890201	EP 1988-112365	19880729
	EP 301587	B1	19920715		
	R: AT, BE, CH, DE, ES, FR, GB, GR, IT, LI, LU, NL, SE				
	JP 01104032	A2	19890421	JP 1988-149453	19880617
	AT 78285	E	19920815	AT 1988-112365	19880729
	US 5114615	A	19920519	US 1991-765411	19910925
PRAI	JP 1987-190193		19870731		
	EP 1988-112365		19880729		
	US 1988-225979		19880729		

OS MARPAT 111:31746  
GI



AB Liquid-crystal compds. having the formula I, where m, n = 1-22 and k, l = 1 or 2, are chemical stable and can be used in display devices operable at room temperature Intermediates for preparing these compds. and methods of their preparation

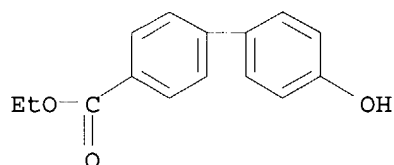
are also claimed.

IT 50670-76-3

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, in formation of liquid-crystal compds.)

RN 50670-76-3 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA  
INDEX NAME)



L20 ANSWER 244 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1989:415479 CAPLUS

DN 111:15479

TI Optically active compounds and liquid-crystal compositions and devices containing them

IN Nohira, Hiroyuki; Kamei, Masanao; Kanazawa, Hideki; Yamada, Yoko; Etoh, Yuko

PA Canon K. K., Japan

SO Eur. Pat. Appl., 60 pp.

CODEN: EPXXDW

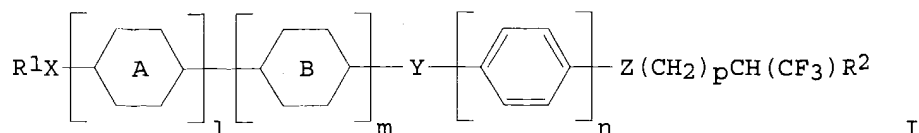
DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
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PI	EP 301511	A1	19890201	EP 1988-112150	19880727
	EP 301511	B1	19920122		
	R: DE, FR, GB, IT, NL, SE				
	JP 01242543	A2	19890927	JP 1988-71035	19880325
	JP 2510664	B2	19960626		
	JP 02000127	A2	19900105	JP 1988-166781	19880706
	US 4918213	A	19900417	US 1988-223363	19880725
	US 5073306	A	19911217	US 1989-385700	19890725
PRAI	JP 1987-186575		19870728		
	JP 1987-204343		19870818		
	JP 1988-41456		19880224		
	JP 1988-71035		19880325		
	JP 1988-166781		19880706		
	US 1988-223363		19880725		

GI



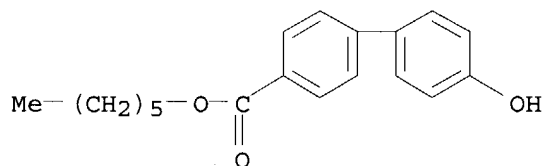
AB The compds. have the formula I, where R<sup>1</sup> = C1-18 alkyl; R<sup>2</sup> = C1-12 alkyl; X = a single bond, O, COO, OOC, or OCOO; Y = a single bond, COO, OOC, CH<sub>2</sub>O, or OCH<sub>2</sub>; Z = OCH<sub>2</sub>, OOC, or COOCH<sub>2</sub>; and rings A and B = 1,4-phenylene, 5,2-pyrimidinylene, or 1,4-cyclohexylene. These compds. have enhanced polarity due to the presence of the CF<sub>3</sub> group.

IT 120223-98-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, in formation of optically active compds. for liquid-crystal compns.)

RN 120223-98-5 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, hexyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 245 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1989:240721 CAPLUS

DN 110:240721

TI Liquid-crystal polymer composition

IN Uchida, Shunji; Morita, Kazuharu; Hashimoto, Kenji

PA Idemitsu Kosan Co., Ltd., Japan

SO Eur. Pat. Appl., 28 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 297554	A2	19890104	EP 1988-110396	19880629
	EP 297554	A3	19890920		
	EP 297554	B1	19930922		
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	JP 01006088	A2	19890110	JP 1987-159735	19870629
	JP 07078218	B4	19950823		
	US 5034153	A	19910723	US 1990-577122	19900904
	US 5271866	A	19931221	US 1991-703838	19910521
	US 5269963	A	19931214	US 1993-33588	19930318
PRAI	JP 1987-159735		19870629		
	US 1988-212475		19880628		
	US 1990-577122		19900904		
	US 1991-703838		19910521		

AB The composition comprises a ferroelec. liquid-crystal polymer and a low-mol.-weight

liquid-crystal compound which exhibits a smectic C or chiral smectic C phase. The ferroelec. polymer is a polyacrylate, siloxane, polyether, or polyester, and the low-mol.-weight compound is a benzene or biphenyl derivative

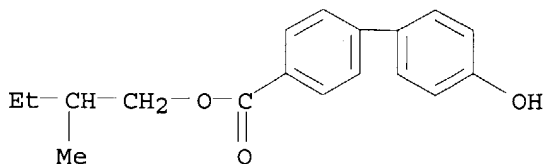
IT 97054-77-8

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, in formation of ferroelec. liquid-crystal polymers)

RN 97054-77-8 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, 2-methylbutyl ester (9CI)  
(CA INDEX NAME)



L20 ANSWER 246 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1989:183151 CAPLUS

DN 110:183151

TI Optically active biphenyl esters for liquid crystal compositions

IN Nohira, Hiroyuki; Nakamura, Shinichi; Iwaki, Takashi

PA Canon K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63303951	A2	19881212	JP 1987-140647	19870604
PRAI	JP 1987-140647		19870604		

OS MARPAT 110:183151

AB Liquid crystal comps. containing R<sub>1</sub>CHFCO<sub>2</sub>(p-C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>XR<sub>2</sub> (I; R<sub>1</sub> = C<sub>4</sub>-16 alkyl; R<sub>2</sub> = C<sub>1</sub>-18 alkyl; X = O, CO<sub>2</sub>) are useful in display devices. The display devices show a rapid response. Thus, optically active 2-fluorooctanoic acid was refluxed with SOCl<sub>2</sub>, then treated with 4-hydroxy-4'-n-decyloxybiphenyl and triethylenediamine in benzene, and the resulting mixture was refluxed with NaOH for 2 h to give 57% I (R<sub>1</sub> = hexyl; R<sub>2</sub> = decyl, X = O) (II). A liquid crystal composition containing 10.0% II showed a

chiral

smectic temperature range of 20-51°, a spontaneous polarization of 12.4 nc/cm<sup>2</sup> and 17.5 nc/cm<sup>2</sup> at 40 and 30°, resp., and a response time of 0.04 ms and 0.09 ms at 40 and 30°, resp.

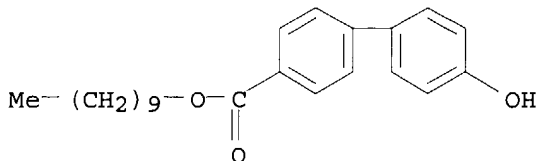
IT 116495-55-7 120223-98-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(esterification of, by fluorooctanoyl chloride)

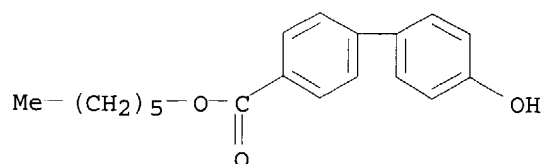
RN 116495-55-7 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, decyl ester (9CI) (CA INDEX NAME)



RN 120223-98-5 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, hexyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 247 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:86123 CAPLUS  
 DN 110:86123  
 TI Liquid-crystal compounds having ether tail moieties  
 IN Cumming, William J.; Gaudiana, R. A.; McGowan, Cynthia; Minns, Richard A.;  
 Naiman, Alaric  
 PA Polaroid Corp., USA  
 SO Eur. Pat. Appl., 46 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 258578	A2	19880309	EP 1987-110034	19870711
	EP 258578	A3	19890510		
	EP 258578	B1	19930107		
	R: BE, DE, FR, GB, IT, NL, SE				
	US 5132041	A	19920721	US 1987-61072	19870623
	CA 1325640	A1	19931228	CA 1987-541794	19870710
	JP 63099040	A2	19880430	JP 1987-180920	19870720

PRAI US 1986-887620 19860721  
 US 1987-61072 19870623

AB The smectic liquid-crystal compds., useful in electrooptical display devices, have the general formula  $R_1(OR_2)aO(R_3)bZR$ , where  $R_1$  = alkyl or alkoxyalkyl;  $R_2, R_3$  = alkylene;  $a$  = an integer  $\geq 1$ ;  $b$  = 0 or 1;  $R$  is an optically active group containing an asym. center; and  $Z$  = an organic

divalent

core radical having parallel or coaxially extending bonds, an axial ratio of  $\geq 2$ , and an essentially rigid and flat mol. structure.

1-Bromo-2-butoxyethane was reacted with 4-hydroxybenzaldehyde to form 4-(2-butoxyethoxy)benzaldehyde, which was reacted with (+)-2-methylbutyl 4-aminocinnamate to form a Schiff-base adduct, having isotropic-smectic A (SA), SA-SC, and SC-crystalline phase transitions at 75.6, 56.2, and 42.2°, resp.

IT 91577-91-2P

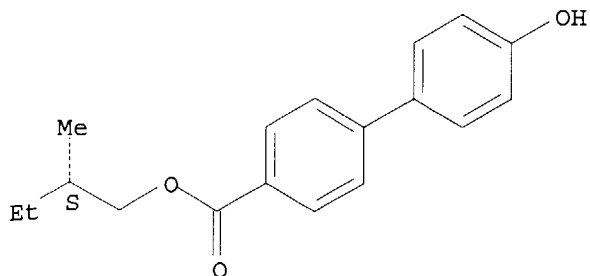
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in formation of smectic liquid crystals)

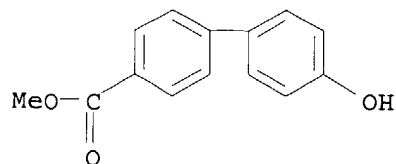
RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



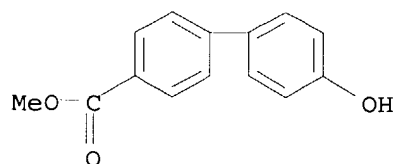
IT 40501-41-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, in preparation of smectic liquid crystals)  
 RN 40501-41-5 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA  
 INDEX NAME)



L20 ANSWER 248 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:76176 CAPLUS  
 DN 110:76176  
 TI Synthesis and estimation of poly[ $\gamma$ -(4-alkoxyphenyl)benzyl-L-glutamates]  
 AU Hanabusa, Kenji; Tanaka, Osamu; Koyama, Toshiki; Kurose, Akio; Shirai, Hirofusa; Hayakawa, Tadao; Hojo, Nobumasa  
 CS Fac. Text. Sci. Technol., Shinshu Univ., Ueda, 386, Japan  
 SO Polymer Journal (Tokyo, Japan) (1988), 20(10), 861-8  
 CODEN: POLJB8; ISSN: 0032-3896  
 DT Journal  
 LA English  
 AB The synthesis and thermal properties of new thermotropic liquid-crystalline (LC)

poly[ $\gamma$ -4-(4'-alkoxyphenyl)benzyl-L-glutamates] (I) are described.  $\gamma$ -4-(4'-Alkoxyphenyl)benzyl-L-glutamates (II) are prepared by the addition of 4-alkoxy-4'-hydroxymethylbiphenyl to N-phthaloyl-L-glutamic anhydride, followed by removal of the N-protecting group. I are synthesized by the polymerization of  $\gamma$ -4-(4'-alkoxyphenyl)benzyl-L-glutamate-N-carboxyanhydrides, which are prepared by treatment of II with phosgene. Although some I do not show transition peaks in DSC heating curves, some show two endothermic transition peaks. Viewing on the hot stage with a polarizing microscope suggests that the first transition is due to the transition from the crystalline state to the 1st LC state and the second one is attributed to the transition from the 1st LC state to the 2nd LC state. Therefore, the long alkyl segment with more than a certain carbon number as the side chain of I is essential for the appearance of the thermotropic LC state.

IT 40501-41-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with bromodocosane)  
 RN 40501-41-5 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA  
 INDEX NAME)



L20 ANSWER 249 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:48606 CAPLUS

DN 110:48606  
 TI Liquid-crystal polymers, especially for large and moving displays  
 IN Morita, Kazuharu; Uchida, Shunji; Hachiya, Satoshi  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO Eur. Pat. Appl., 41 pp.  
 CODEN: EPXXDW

DT Patent  
 LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 258898	A2	19880309	EP 1987-112891	19870903
	EP 258898	A3	19890614		
	EP 258898	B1	19920422		
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	JP 01022919	A2	19890125	JP 1987-179139	19870720
	US 4818807	A	19890404	US 1987-92612	19870903
	JP 01113424	A2	19890502	JP 1987-219225	19870903
PRAI	JP 1986-206851		19860904		
	JP 1987-173025		19870713		
	JP 1987-179139		19870720		

AB The title polymers, which show ferroelec. chiral smectic C phases over wide temperature ranges (including the vicinity of room temperature) and high-speed responses to external factors, have repeating units of the general formula  $\text{CH}_2\text{C}(\text{R}_1)[\text{CO}_2(\text{CH}_2)_k\text{AmR}_2]\text{CH}_2\text{O}_2\text{C}(\text{CH}_2)_l\text{CO}_2$ , where  $\text{R}_1 = \text{H, Me, or Et}$ ;  $l = 1-20$ ;  $k = 1-30$ ;  $A = \text{O or CO}_2$ ;  $m = 0 \text{ or } 1$ ;  $\text{R}_2 = \text{PhePheR}_3, \text{PheYPheR}_3, \text{PheYPhePheR}_3, \text{ or PhePheYPheR}_3$ ;  $\text{Phe} = 1,4\text{-phenylene}$ ;  $\text{Y} = \text{CO}_2 \text{ or OCO}$ ;  $\text{R}_3 = \text{COOR}_4, \text{OCOR}_4, \text{OR}_4, \text{COR}_4, \text{ or R}_4$ ;  $\text{R}_4 = (\text{CH}_2)_n[\text{CH}(\text{X})]_q\text{CH}(\text{R}_5)(\text{CH}_2)_p\text{Me}$ ;  $\text{R}_5 = \text{Me, CN, or halogen}$ ;  $n, p = 0-10$  ( $p \neq 0$  if  $\text{R}_5 = \text{Me}$ );  $\text{X} = \text{halogen}$ ; and  $q = 0 \text{ or } 1$ . 4'-Hydroxybiphenyl-4-carboxylic acid was esterified with (S)-(-)-2-methylbutanol, the hydroxy ester obtained was reacted with 1,12-dibromododecane, the product was reacted with 2,2-bis(hydroxymethyl)propionic acid, and that product was condensation polymerized with malonyl dichloride to prepare a polymer having number average mol. weight 5000, response time 0.04 s, and glass-smectic, smectic-chiral smectic C (SC\*), SC\*-SA, and SA-isotropic phase transitions at -7, -1, 27, and 74°, resp., during heating. The transition temps. were somewhat lower during cooling.

IT 91577-91-2P

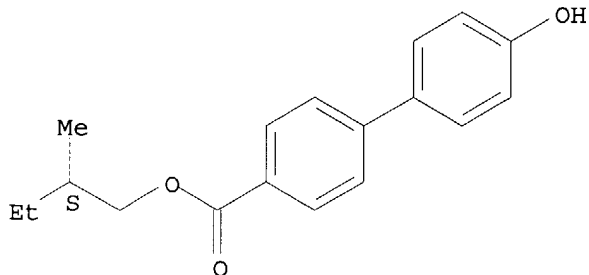
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in formation of liquid-crystal polymers)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

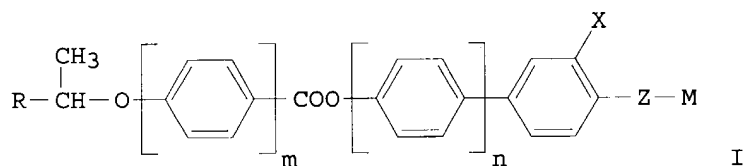
Absolute stereochemistry. Rotation (-).





AN 1989:31857 CAPLUS  
 DN 110:31857  
 TI Optically active liquid crystal compounds  
 IN Takehara, Sadao; Fujisawa, Noburu; Ogawa, Hiroshi; Osawa, Masashi; Shoji, Tadao  
 PA Dainippon Ink and Chemicals, Inc., Japan; Kawamura Physical and Chemical Research Institute  
 SO Jpn. Kokai Tokkyo Koho, 18 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63175095	A2	19880719	JP 1987-5147	19870114
	JP 2524341	B2	19960814		
PRAI	JP 1987-5147		19870114		
OS	MARPAT 110:31857				
GI					



AB The title compound is represented by I (R = C2-16 alkyl; X = H, F, or Cl; Z = COO, O, OCO, or bond; M = (S)-2-methylbutyl; m = 1 or 2; n = 0 or 1). The direction of twisting of the R-CH(Me)O radical may be inverse to that of the Z-M radical in I. Thus, 4'-(1-methylheptyloxy)biphenyl-4-carboxylic acid (II) was prepared from 4'-hydroxybiphenyl-4-carboxylic acid and (R)-2-octyl-p-toluenesulfonate which was prepared from (R)-2-octanol and p-toluenesulfonyl chloride, 4'-(1-methylheptyloxy)biphenyl-4-carbonyl chloride was prepared from II and reacted with (S)-2-methylbutyl 4-hydroxybenzoate, which was prepared from 4-hydroxybenzoic acid and (S)-2-methylbutyl alc., to form I (R = C6H13, m = 2, n = 0, X = H, Z = COO). The liquid crystal compound prepared had 42.5 in chiral smectic C-to-smectic A transition.

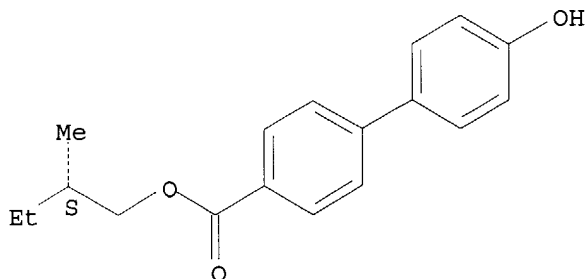
IT **91577-91-2P**, (S)-2-Methylbutyl 4'-hydroxybiphenyl-4-carboxylate  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, liquid crystal from)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 251 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:31856 CAPLUS  
 DN 110:31856  
 TI Biphenylcarboxylate derivative compounds and liquid crystal compositions therefrom  
 IN Suzuki, Kenji; Yamazaki, Yasuhiro; Sugiura, Atsushi; Fujii, Tsunenori  
 PA Kanto Chemical Co., Inc., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese

FAN.CNT 1

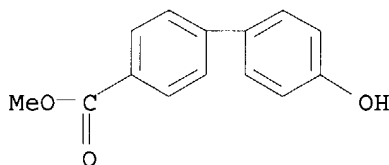
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63126844	A2	19880530	JP 1986-269524	19861114
	JP 07074182	B4	19950809		
PRAI	JP 1986-269524		19861114		

AB The title compound is represented by EtCH(Me)(CH<sub>2</sub>)<sub>n</sub>O-p-(C<sub>6</sub>H<sub>4</sub>)-p-(C<sub>6</sub>H<sub>4</sub>)CO<sub>2</sub>-p-(C<sub>6</sub>H<sub>4</sub>)OR (I) (R = C<sub>1</sub>-18 alkyl; n = 1-7). Thus, (S)-2-Me 4-[(2''-methylbutyl)oxy]biphenyl-4'-carboxylate (II) was prepared from Me 4-hydroxybiphenyl-4'-carboxylate and (S)-2-methylbutyl-p-toluenesulfonate, which was prepared from (S)-2-Me-1-butanol and p-toluenesulfonyl chloride, (S)-4-[(2''-methylbutyl)oxy]biphenyl-4'-carbonyl chloride (III) was prepared from II through (S)-4-[(2''-methylbutyl)oxy]biphenyl-4'-carboxylic acid. I (R = C<sub>8</sub>H<sub>17</sub>, n = 1) was prepared from III and p-octyloxyphenol. I (R = C<sub>8</sub>H<sub>17</sub>, n = 1) had 102 and 132.5° in crystal-to-chiral smectic C and chiral smectic C-to-smectic A transition, resp.

IT **40501-41-5**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, liquid crystal from)

RN 40501-41-5 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 252 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1989:31855 CAPLUS  
 DN 110:31855  
 TI Polyacrylate liquid crystals  
 IN Morita, Kazuharu; Uchida, Toshiharu; Hashimoto, Kenji; Hashiya, Satoshi  
 PA Idemitsu Kosan Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 11 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63161005	A2	19880704	JP 1986-308017	19861225
PRAI	JP 1986-308017		19861225		

AB The title polymer has repeating units of CH<sub>2</sub>CH(COO(CH<sub>2</sub>)<sub>k</sub>COOR<sub>1</sub>) (I) (k = 1-30; R<sub>1</sub> = p-(C<sub>6</sub>H<sub>4</sub>)COO-p-(C<sub>6</sub>H<sub>4</sub>)R<sub>2</sub>, p-(C<sub>6</sub>H<sub>4</sub>)COO-p-(C<sub>6</sub>H<sub>4</sub>)-p-(C<sub>6</sub>H<sub>4</sub>)R<sub>2</sub>, p-(C<sub>6</sub>H<sub>4</sub>)-p-(C<sub>6</sub>H<sub>4</sub>)COO-p-(C<sub>6</sub>H<sub>4</sub>)R<sub>2</sub>, or p-(C<sub>6</sub>H<sub>4</sub>)-p-(C<sub>6</sub>H<sub>4</sub>)R<sub>2</sub>; R<sub>2</sub> = COOR<sub>3</sub>, OR<sub>3</sub>, or R<sub>3</sub>; R<sub>3</sub> = (CH<sub>2</sub>)<sub>m</sub>CH(Me)(CH<sub>2</sub>)<sub>n</sub>Me (m = 0-5, n = 1-5). Thus,

2-methylbutyl-4'-(4''-carbobenzoxyoxybenzoxy)biphenyl-4-carboxylate (II) was prepared from 2-methylbutyl-4'-hydroxybiphenyl-4-carboxylate and 4-carbobenzoxybenzoyl chloride, 2-methylbutyl-4'-(4''-hydroxybenzoxy)biphenyl-4-carboxylate (III) was prepared from II, 16-acryloyloxyhexadecanoyl chloride (IV) was prepared from 16-hydroxyhexadecanoic acid and acryloyl chloride, 2-methylbutyl-4'-(4''-(16-acryloyloxyhexadecanoyloxy)benzoxy)biphenyl-4-carboxylate (V) was prepared from III and IV. V was polymerized at 60 for 16 h. The polymer prepared

had crystal-to-chiral smectic C and chiral smectic C-to-smectic A transition at 90 and 100°, resp.

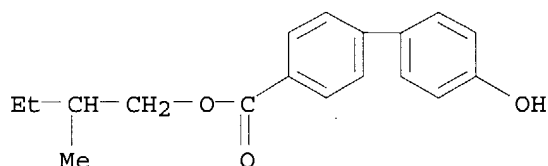
IT **97054-77-8P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, liquid crystals from)

RN 97054-77-8 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, 2-methylbutyl ester (9CI)  
(CA INDEX NAME)



L20 ANSWER 253 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:641519 CAPLUS

DN 109:241519

TI New liquid crystal compounds

IN Morita, Kazuharu; Hachiya, Satoshi

PA Idemitsu Kosan Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 17 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63107950	A2	19880512	JP 1987-141558	19870608
	JP 06074240	B4	19940921		
PRAI	JP 1986-141449		19860619		

OS MARPAT 109:241519

AB The title compound is represented by R1X1CH2C(R2)(CH2X2R5)CO2R3OR4CO2CH2CH(Me)Et (R1, R5 = C1-5 alkyl; X1, X2 = O, OCO, or CO2; R2 = H or Me; R3 = C1-20 alkyl; R4 = biphenyl, (C6H4)CO2(C6H4), (C6H4)CO2(C6H4)(C6H4), or (C6H4)(C6H4)CO2(C6H4) (I). Thus, 2-methylbutyl 4'-(12-(2,2-diacetoxymethylpropionyloxy)dodecyloxy)biphenyl-4-carboxylate (V) was prepared by preparation of 2-methylbutyl 4'-hydroxybiphenyl-4-carboxylate (II) from 4'-hydroxybiphenyl-4-carboxylic acid and 2-methylbutanol, 2-methylbutyl 4'-(12-bromododecyloxy)biphenyl-4-carboxylate (III) from II and dibromododecane, 2-methylbutyl 4'-(12-dimethylolpropionyloxydodecyloxy)biphenyl-4-carboxylate (IV) from III and dimethylolpropionic acid, and reaction of IV with AcOH. V had a chiral smectic C phase between 18 and -8°.

IT **91577-91-2P**

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

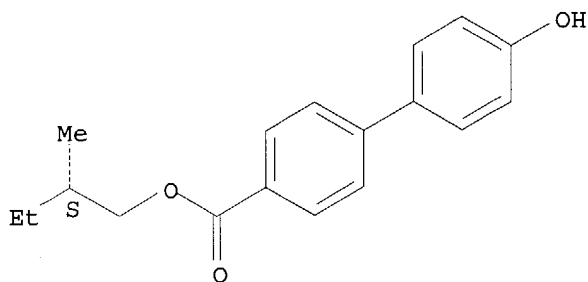
(preparation and reaction of, liquid crystal from)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester

(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 254 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:641518 CAPLUS

DN 109:241518

TI Biphenyl carboxylate derivative compounds and liquid crystal compositions containing them

IN Suzuki, Kenji; Tsuchiya, Kazuhiko; Sugiura, Atsushi; Fujii, Tsunenori

PA Kanto Chemical Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

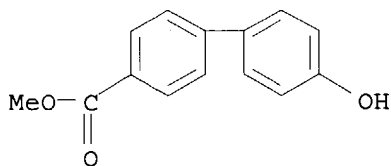
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63096156	A2	19880427	JP 1986-241286	19861013
PRAI	JP 1986-241286		19861013		
OS	CASREACT 109:241518; MARPAT 109:241518				
AB	The title compound is represented by $R1O(C6H4)(C6H4)COOR$ (I) ( $R1$ = alkyl containing asym. C, $R$ = C1-18 alkyl); $R1$ may be $CH_3(CH_2nCH(CH_3)CH_2m$ ( $m$ = 0-11; $n$ = 1-11; $m+n \leq 14$ ). Thus, (S)-2-methylbutyl toluenesulfonate (II) was prepared from (S)-2-methylbutanol and p-toluenesulfonyl chloride; (S)-Me 4-[2''-methylbutyl]oxybiphenyl-4'-carboxylate (III) was prepared from II and Me 4-hydroxybiphenyl-4'-carboxylate; (S)-Me 4-[(2''-methylbutyl)oxy]biphenyl-4'-carbonyl chloride (IV) was prepared from III through (S)-Me 4-[(2''-methylbutyl)oxy]biphenyl-4'-carboxylic acid, and (S)-hexyl 4-[(2''-methylbutyl)oxy]biphenyl-4'-carboxylate (V) was prepared from IV and hexanol. V had a 40.4° isotropic-to-smectic A transition.				
IT	40501-41-5, Methyl 4-hydroxybiphenyl-4'-carboxylate				
RL	RCT (Reactant); RACT (Reactant or reagent)				
	(reaction of, in liquid crystal preparation)				
RN	40501-41-5 CAPLUS				
CN	[1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)				



L20 ANSWER 255 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:641509 CAPLUS

DN 109:241509  
 TI Biphenylcarboxylate esters and liquid-crystal compositions therefrom  
 IN Suzuki, Kenji; Sugiura, Atsushi; Fujii, Tsunenori  
 PA Kanto Chemical Co., Ltd., Japan  
 SO Jpn. Kokai Tokkyo Koho, 9 pp.  
 CODEN: JKXXAF

DT Patent  
 LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63093749	A2	19880425	JP 1986-237818	19861008
	JP 07033355	B4	19950412		
PRAI	JP 1986-237818		19861008		

OS MARPAT 109:241509

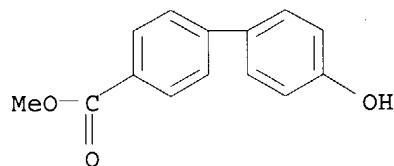
AB The esters have the general formula  $R_1O(C_6H_4)(C_6H_4)CO_2(C_6H_4)(CH_2)_nOR_2$  (I) ( $R_1 = C_4-14$  alkyl containing asym. C;  $R_2 = C_1-12$  alkyl;  $n = 1-12$ ; and sum of  $n$  and the number of C in  $R_2 \leq 14$ ).  $R_1$  may be  $EtCH(Me)(CH_2)_m$  ( $m = 0-10$ ) (II). Thus, (S)-6-methyloctyl bromide (III) was formed from (S)-2-methylbutyl bromide and  $Br(CH_2)_4Br$ , (S)-methyl-4-[(6"-methyloctyl)oxy]biphenylcarboxylate (IV) was prepared from III and methyl-4-hydroxybiphenyl-4'-carboxylate, (S)-4-[(6"-methyloctyl)oxy]biphenyl-4'-carbonyl chloride (V) was prepared from IV via formation of the carboxylic acid, and I ( $R_1 = II$  ( $m = 5$ ),  $n = 3$ ,  $R_2 = Et$ ) was prepared from V with p-(3-ethoxypropyl)phenol. The final product had a chiral smectic phase at  $81-140^\circ$ .

IT 40501-41-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, in preparation of liquid crystals)

RN 40501-41-5 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI). (CA INDEX NAME)



L20 ANSWER 256 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:631753 CAPLUS

DN 109:231753

TI Liquid-crystalline branched polyoxyalkylenes

IN Hachiya, Satoshi; Uchida, Shunji; Hashimoto, Kenji

PA Idemitsu Kosan Co., Ltd., Japan

SO Eur. Pat. Appl., 64 pp.

CODEN: EPXXDW

DT Patent

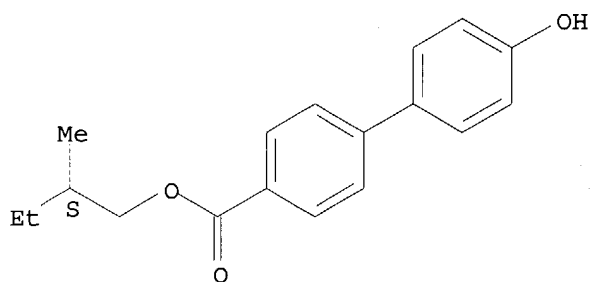
LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 274128	A2	19880713	EP 1987-119309	19871229
	EP 274128	A3	19891227		
	EP 274128	B1	19990331		
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	JP 63264629	A2	19881101	JP 1987-288476	19871117
	JP 04057694	B4	19920914		
	JP 01131234	A2	19890524	JP 1987-288475	19871117
	JP 04057693	B4	19920914		

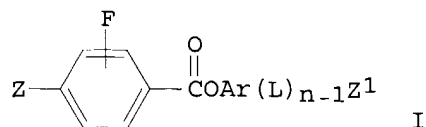
US 4877858 A 19891031 US 1988-272010 19881116  
 PRAI JP 1986-309466 19861229  
 JP 1987-288475 19871117  
 JP 1987-288476 19871117  
 US 1987-136868 19871222  
 AB Title polymers contain polyalkylene branches which are etherified by di-Ph and aromatic carbonates and esters having p-alkyl groups substituted with Me, halogen or CN. The polymers exhibit ferroelectricity at room temperature and are useful in display devices, etc. Mixing 2-methylbutyl-4'-hydroxybiphenyl-4-carboxylate (obtained by esterification of the acid precursor with (S)-(-)-2-methylbutanol) and a heat- and NaI-treated 10-chloro-1-decene (a chlorination product of 9-decene-1-ol with 50 SOCl<sub>2</sub>) 10 h at 80° in the presence of K<sub>2</sub>CO<sub>3</sub> in 2-butanone gave 2-methylbutyl 4'-(9-decenyloxy)-biphenyl-4-carboxylate (I). Peroxidn. of I using m-chloroperbenzoic acid gave an oxirane-containing product which was polymerized in the presence of SnCl<sub>2</sub> to obtained a liquid crystalline branched polyoxyethylene showing spontaneous polarization intensity 9.5 nc/cm<sup>2</sup> and elec. field response speed 0.02 s.  
 IT 91577-91-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with unsatd. chloro compds.)  
 RN 91577-91-2 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 257 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1988:619719 CAPLUS  
 DN 109:219719  
 TI Liquid crystal compounds having fluorine-containing core  
 IN Cumming, William J.; Gaudiana, R. A.; McGowan, Cynthia; Minns, Richard A.; Naiman, Alaric  
 PA Polaroid Corp., USA  
 SO Eur. Pat. Appl., 51 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 256303	A2	19880224	EP 1987-110035	19870711
	EP 256303	A3	19881019		
	R: BE, DE, FR, GB, IT, NL, SE				
	JP 63039839	A2	19880220	JP 1987-180921	19870720
PRAI	US 1986-887619		19860721		
	US 1987-61071		19870623		
OS	MARPAT 109:219719				
GI					



AB Liquid crystal compds. exhibiting ferroelec. behavior and favorable spontaneous polarization values have the formula I [Ar = p-phenylene, p,p'-biphenylene; L = linking group selected from CH<sub>2</sub>O, CO<sub>2</sub>, OCO; n = 1, 2; each of Z, Z<sub>1</sub> = alkyl, alkoxy, alkoxyalkyl, or optically active group containing an asym. center; ≥1 of Z and Z<sub>1</sub> is an optically active group containing an asym. center]. The compds. exhibiting the chiral smectic C phase are particularly suited to application in ferroelec. display devices.

IT **91577-91-2P**

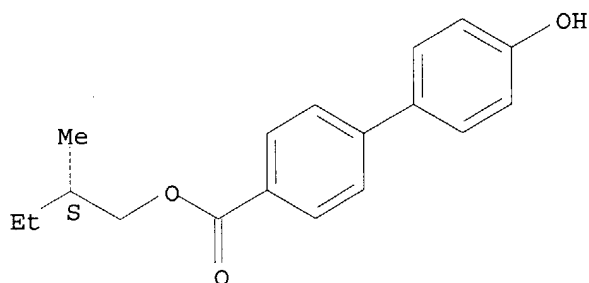
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, ferroelec. liquid crystal from, for display device)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 258 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:561077 CAPLUS

DN 109:161077

TI New liquid crystal compounds and liquid crystal compositions

IN Suzuki, Kenji; Sugiura, Atsushi; Hide, Tetsuo; Fujii, Tsunenori

PA Kanto Chemical Co., Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

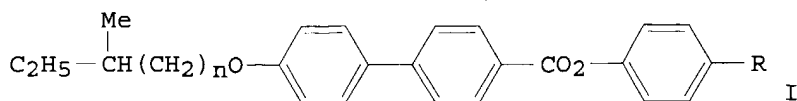
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63041446	A2	19880222	JP 1986-185066	19860808
	JP 07084416	B4	19950913		
PRAI	JP 1986-185066		19860808		
OS	MARPAT 109:161077				
GI					



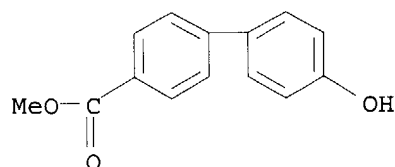
AB The title material is represented by I (R = C1-18 alkyl and n = 1-7). A liquid crystal composition contains >1 of I. Thus, 2-methylbutyl p-toluenesulfonate (II) was prepared from 2-methylbutanol and p-toluenesulfonyl chloride, Me 4-[(2''-methylbutyl)oxy]biphenyl-4'-carboxylate (III) was prepared from Me4-hydroxybiphenyl-4'-carboxylate and II and 4-[(2''-methylbutyl)oxy]biphenyl-4'-carboxylic acid was prepared from III, and 4-[(2''-methylbutyl)oxy]biphenyl-4'-carbonyl chloride (IV) was prepared therefrom. I (R = C6H13, n = 1) was prepared from IV and p-hexylphenol. I had crystal-smectic and cholesteric-isotropic transition temperature of 77 and 155°, resp.

IT 40501-41-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, liquid crystal compound from)

RN 40501-41-5 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 259 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:560744 CAPLUS

DN 109:160744

TI Optically active 6-alkoxypyridine-3-carboxylic acid 4'-alkoxycarbonyl-4-biphenyl esters as ferroelectric chiral smectic liquid crystals

IN Sakurai, Yuzo; Kitajima, Norio; Hasegawa, Sakie

PA Toray Industries, Inc., Japan

SO Jpn. Kokai Tokkyo Koho, 7 pp.

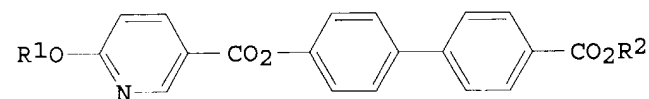
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63045258	A2	19880226	JP 1987-100418	19870423
PRAI	JP 1986-95076		19860424		
OS	MARPAT 109:160744				
GI					



I

AB The title compds. I (R1 = C2-14 alkyl; R2 = optically active alkyl) show a ferroelec. chiral smectic C phase and are useful as components to improve mesomorphic ranges in display devices. 4-HOC6H4C6H4CO2H-4 was treated with (S)-EtCHMeCH2OH and the resulting ester was treated with 6-octyloxynicotinic acid to give (S)-I (R1 = octyl, R2 = CH2CHMeEt) which showed a monotropic chiral smectic C phase. Similarly prepared (S)-I (R1 = hexyl, R2 = CH2CHMeEt) was added to (S)-2-methylbutyl 6-(4'-hexadecyloxybenzoyloxy)pyridine-3-carboxylate to improve the mesomorphic range.



IT 91577-91-2P

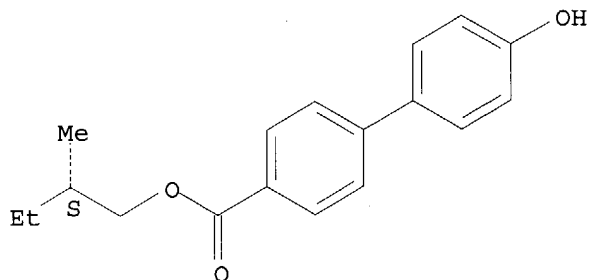
RL: PREP (Preparation)

(preparation and esterification with, of pyridinecarbonyl chlorides, ferroelec. chiral smectic liquid crystals from)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 260 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:539339 CAPLUS

DN 109:139339

TI Phenyl lactate derivative compounds for liquid-crystal compositions

IN Katagiri, Kazuharu; Shinjo, Kenji; Yoshida, Akio; Iwaki, Takashi; Yamashita, Masataka

PA Canon K. K., Japan

SO Jpn. Kokai Tokkyo Koho, 11 pp.

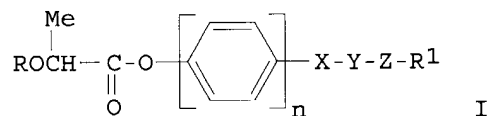
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63044551	A2	19880225	JP 1986-187152	19860809
PRAI	JP 1986-187152		19860809		
OS	MARPAT 109:139339				
GI					



AB The title material is represented by chiral I (R = C1-18 alkyl; R1 = C4-18 alkyl; X = bond, CO2, or O2C; Y = p-phenylene, 2,5-pyrimidinylene, 1,4-cyclohexylene, or p-C6H4-p-C6H4; Z = O or CO2; and n = 1 or 2). A liquid-crystal composition containing I is used for optical imaging devices. A toluene solution of 2-n-octyloxypropionyl chloride, prepared from (-)-2-n-octyloxypropionic acid with SOCl2 was added to a pyridine solution of 5-n-decyl-2-(4-hydroxyphenyl)pyrimidine, and 5-n-decyl-2-[4-(2-n-octyloxypropanoyloxy)phenyl]pyrimidine was prepared. The product had 43.9° in m.p.

IT 116495-55-7, n-Decyl 4-hydroxybiphenyl carboxylate

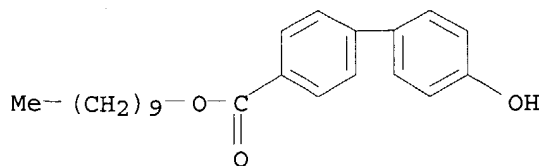
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, liquid crystal from)

RN 116495-55-7 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, decyl ester (9CI) (CA

INDEX NAME)



L20 ANSWER 261 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:510035 CAPLUS

DN 109:110035

TI Preparation of hydroxyarenecarboxylate esters

IN Yamataka, Kazunori; Matsuoka, Yuji

PA Asahi Chemical Industry Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 4 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62187435	A2	19870815	JP 1986-27869	19860213
PRAI	JP 1986-27869		19860213		

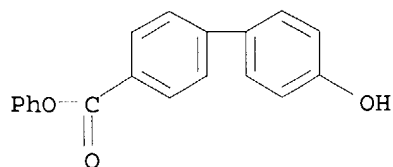
AB The title esters, useful as raw materials for fibers and resins of improved chemical and heat resistance, are prepared by alkoxycarbonylation of halophenol derivs. (except o-isomers) with CO in an alc. in the presence of a base and a catalyst containing a transition metal compound. Thus, autoclaving p-iodophenol, Bu<sub>3</sub>N, Pd chloride, Ph<sub>3</sub>P, EtOH, and CO at 140° and 20 kg/cm<sup>2</sup> gauge for 1 h gave 85% Et p-hydroxybenzoate.

IT **116237-50-4P**

RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of, as raw material for fibers and resins)

RN 116237-50-4 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, phenyl ester (9CI) (CA  
INDEX NAME)



L20 ANSWER 262 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:229782 CAPLUS

DN 108:229782

TI Optically active biphenylcarboxylate esters for electrooptical devices

IN Morita, Kazuharu; Uchida, Toshiharu

PA Idemitsu Kosan Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 3 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62238243	A2	19871019	JP 1986-76616	19860404

PRAI JP 1986-76616

19860404

AB The title esters  $R_1CO_2AqC_6H_4-p-C_6H_4-p-CO_2(CH_2)_rC^*HR_2(CH_2)_sMe$  (I;  $R_1 = C_2-10$  alkyl, alkenyl;  $R_2 = Me, Cl, Br, cyano$ ;  $A = (CH_2)_nO$ ;  $n = 1-10$ ;  $q = 0, 1$ ;  $r, s = 0-10$ ) show a ferroelec. chiral smectic C phase below room temperature and are useful for field effect-type liquid-crystal display devices.

Thus,  $EtCO_2(CH_2)_6Br$ , prepared from  $EtCO_2H$  and  $Br(CH_2)_6Br$ , was treated with a ester, prepared from 4'-hydroxybiphenyl-4-carboxylic acid and (S)-(-)- $EtCHMeCH_2OH$ , to give I ( $R_1 = Et$ ;  $R_2 = Me$ ;  $n = 6$ ;  $q = r = s = 1$ ) which showed a chiral smectic C phase at  $13.5-16^\circ$ .

IT 91577-91-2P

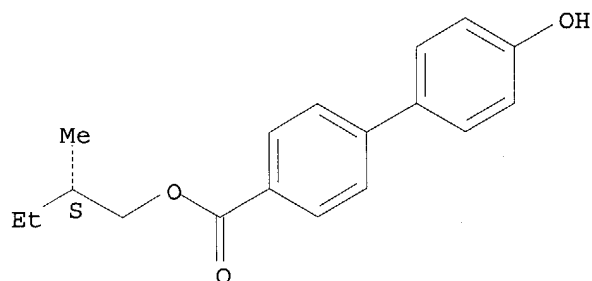
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)

(preparation and esterification of, with bromohexyl carboxylates, in preparation of liquid crystals)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 263 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:85808 CAPLUS

DN 108:85808

TI Ferroelectric liquid crystal polymer

IN Uchida, Shunji; Morita, Kazuharu; Hashimoto, Kenji

PA Idemitsu Kosan Co., Ltd., Japan

SO Eur. Pat. Appl., 70 pp.

CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 228703	A2	19870715	EP 1986-118019	19861223
	EP 228703	A3	19880810		
	EP 228703	B1	19930310		
	R: BE, CH, DE, FR, GB, IT, LI, NL, SE				
	JP 62277412	A2	19871202	JP 1986-120313	19860527
	JP 63072784	A2	19880402	JP 1986-217235	19860917
	US 4844835	A	19890704	US 1986-383	19861222
	JP 63099204	A2	19880430	JP 1986-305251	19861223
	US 4913839	A	19900403	US 1989-340033	19890418
PRAI	JP 1985-292274		19851226		
	JP 1986-120313		19860527		
	JP 1986-122155		19860529		
	JP 1986-217235		19860917		
	US 1986-383		19861222		

AB A ferroelec. liquid crystal polymer is described comprising the monomer  $CH_2:CHCO_2(CH_2)_nOR_1$  [ $n = 1-30$ ;  $R_1 = p-C_6H_4-CO_2-p-C_6H_4-R_2$ ,  $p-C_6H_4-p-C_6H_4R_2$ ,  $p-C_6H_4CO_2-p-C_6H_4-p-C_6H_4R_2$ , or  $p-C_6H_4-p-C_6H_4-CO_2-p-C_6H_4R_2$ ;  $R_2 = CO_2R_3$ ,

O<sub>2</sub>CR<sub>3</sub>, OR<sub>3</sub>, or R<sub>3</sub>; R<sub>3</sub> = (CH<sub>2</sub>)<sub>m</sub>CHR<sub>4</sub>(CH<sub>2</sub>)<sub>k</sub>CH<sub>3</sub>; R<sub>4</sub> = Me or Cl; m = 0-10; k = 0-10 provided n ≠ 0 when R<sub>4</sub> = Me]. The polymer exhibits ferroelec. even at about room temperature and has fast response to the external factors as to be able to display motion picture. It may be used as display element for large screens and curved screens. Thus, acrylic acid was reacted with 1,2-dibromoethane to obtain 2-bromoethyl acrylate (I). Then, 4'-hydroxybiphenyl-4-carboxylic acid was reacted with (S)-(-)-2-methylbutanol to obtain a hydroxy ester (II). I and II were mixed and reacted to obtain 2-methylbutyl 4'-(2-acryloxyoxyethoxy)biphenyl-4-carboxylate which was polymerized to obtain a liquid crystal. The crystal had response time 0.18 s at 71°.

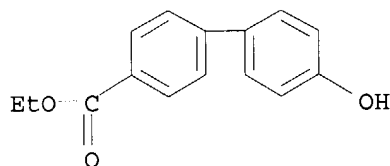
IT 50670-76-3P 91577-91-2P 112231-63-7P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction of, in preparation of ferroelec. polyester liquid crystal)

RN 50670-76-3 CAPLUS

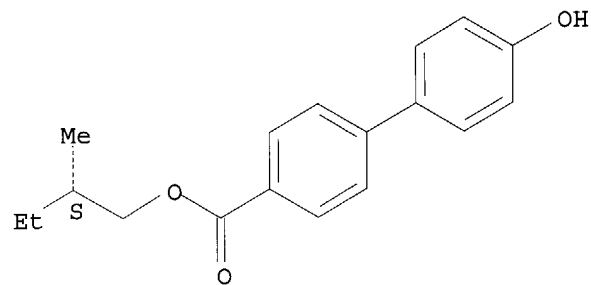
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



RN 91577-91-2 CAPLUS

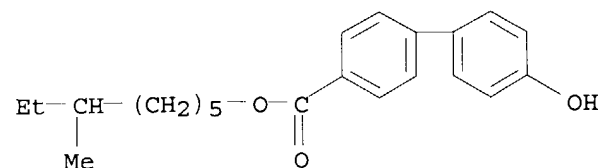
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



RN 112231-63-7 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, 6-methyloctyl ester (9CI) (CA INDEX NAME)



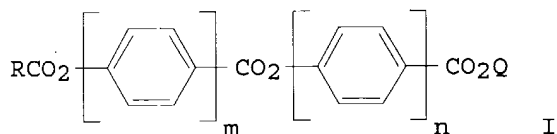
L20 ANSWER 264 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:85400 CAPLUS

DN 108:85400

TI Chiral smectic liquid crystals for optical switching devices  
 IN Takehara, Sadao; Fujisawa, Noburu; Ogawa, Hiroshi; Shoji, Tadao; Osawa, Masashi  
 PA Dainippon Ink and Chemicals, Inc., Japan; Kawamura Physical and Chemical Research Institute  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62181237	A2	19870808	JP 1986-22187	19860205
PRAI	JP 1986-22187		19860205		
GI					



AB Liquid-crystal compns. containing I (R = C1-20 alkyl; Q = optically-active alkyl; m, n = 1,2) are useful for optical switching devices. The compns. show ferroelectricity near room temperature and provide liquid crystal display devices with fast response. Thus, 4-C<sub>11</sub>H<sub>23</sub>CO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H, prepared from 4-HOC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H and C<sub>11</sub>H<sub>23</sub>COCl, was treated with SOCl<sub>2</sub>, and then the resulting benzoyl chloride was refluxed with 4-(S)-EtCHMeCH<sub>2</sub>O<sub>2</sub>CC<sub>6</sub>H<sub>4</sub>OH to give I [R = C<sub>11</sub>H<sub>23</sub>; Q = (S)-CH<sub>2</sub>CHMeEt; m, n = 1] (II) showing chiral smectic C-smectic A transition at 45.5°. II was used in liquid crystal display to show response time 176 μs at 43.5° and spontaneous polarization 1.11 nC/cm<sup>2</sup> at 40°.

IT 91577-91-2

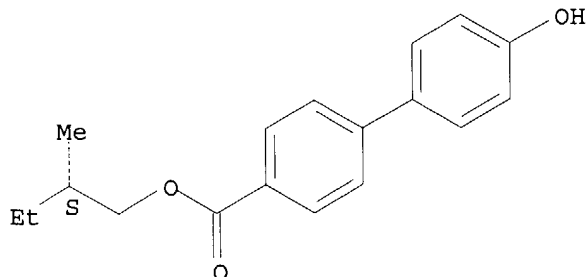
RL: USES (Uses)

(esterification with, of benzoic acid derivs., in formation of chiral smectic liquid crystals)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 265 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1988:85399 CAPLUS

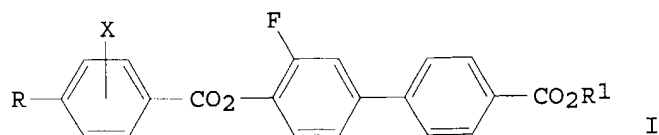
DN 108:85399

TI Fluorobiphenyl benzoate derivative liquid crystals for optical switching devices for display

IN Shoji, Tadao; Osawa, Masashi; Takehara, Sadao; Fujisawa, Noburu; Ogawa,

Hiroshi  
 PA Dainippon Ink and Chemicals, Inc., Japan; Kawamura Physical and Chemical  
 Research Institute  
 SO Jpn. Kokai Tokkyo Koho, 7 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN. CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62181239	A2	19870808	JP 1986-22897	19860206
	JP 07014899	B4	19950222		
PRAI	JP 1986-22897		19860206		
GI					



AB The title compds. I (R = C<sub>1-20</sub> alkyl, alkoxy; R<sub>1</sub> = optically active group; X = H, halo) are useful for optical switching devices. The compds. show ferroelectricity and provide liquid-crystal display devices with rapid response. Thus, 4-C<sub>10</sub>H<sub>21</sub>OC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H was refluxed with SOCl<sub>2</sub> and then treated with (S)-2-methylbutyl 3'-fluoro-4'-hydroxy-4-biphenylcarboxylate at 60-70° for 3 h and let stand overnight to give I [R = C<sub>10</sub>H<sub>21</sub>, R<sub>1</sub> = (S)-CH<sub>2</sub>CHMeEt, X = H] (II). A mixture of II 50 and (S)-2-methylbutyl 4-(3'-fluoro-4'-decyloxybiphenyl-4-carboxyloxy)benzoate (chiral smectic phase at 54.0-124.2°) 50% showed chiral smectic phase at 13.8-146.5° and response time 550 μs at 65° when used in liquid crystal display cell.

IT 106316-31-8P

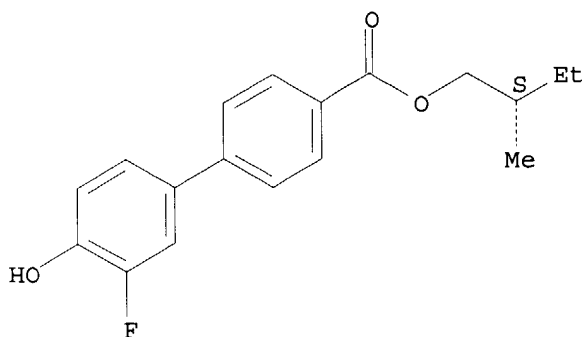
RL: PREP (Preparation)

(preparation and esterification of alkoxybenzoic acids with, in liquid-crystal preparation)

RN 106316-31-8 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 3'-fluoro-4'-hydroxy-, 2-methylbutyl ester, (S)- (9CI) (CA INDEX NAME)

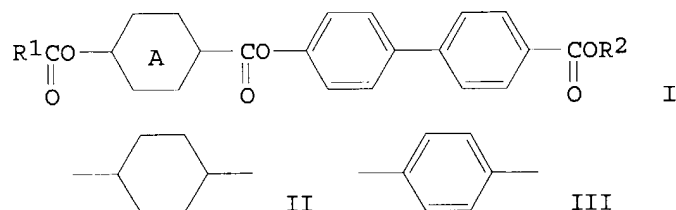
Absolute stereochemistry.



L20 ANSWER 266 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1987:609011 CAPLUS  
 DN 107:209011

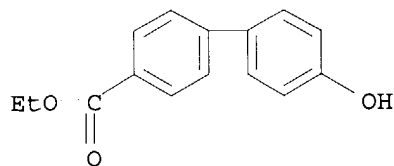
TI Biphenylcarboxylate esters for liquid-crystal compositions  
 IN Isoyama, Toyoshiro; Ogawa, Tetsuya; Sugimori, Shigeru  
 PA Chisso Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 4 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62087556	A2	19870422	JP 1985-228346	19851014
	US 4778621	A	19881018	US 1986-917491	19861010
PRAI	JP 1985-228346		19851014		
OS	CASREACT 107:209011				
GI					



AB The compds. I (R1,R2 = C1-10 alkyl; A = II, III) are prepared Liquid-crystal compns. with high nematic-isotropic phase transition temps. are obtained. Thus, I (R1 = R2 = Et; A = III) was prepared by condensation of 4-propanoyloxybenzoyl chloride and 4'-hydroxybiphenyl-4-carboxylic acid Et ester. The nematic-isotropic phase transition temperature of the product was >300°.

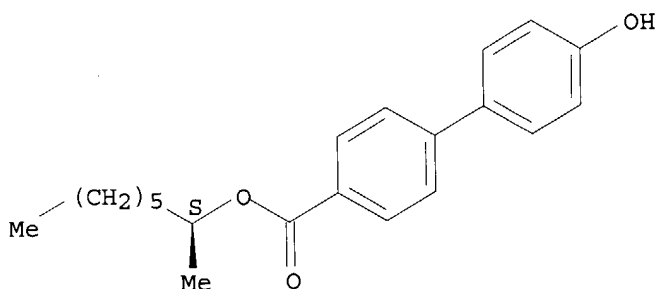
IT **50670-76-3**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reactions of, in preparation of nematic liquid crystals)  
 RN 50670-76-3 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 267 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1987:609008 CAPLUS  
 DN 107:209008  
 TI Liquid crystalline benzoic acid carbonate derivatives for optical switching devices  
 IN Miyazawa, Kazutoshi; Saito, Shinichi; Inoue, Hiromichi; Inukai, Takashi; Terajima, Kenji  
 PA Chisso Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62048651	A2	19870303	JP 1985-187982	19850827
	JP 06015508	B4	19940302		
	EP 216530	A1	19870401	EP 1986-306628	19860827
	EP 216530	B1	19911023		
	R: CH, DE, FR, GB, LI				
	US 4816181	A	19890328	US 1986-900812	19860827
PRAI	JP 1985-187982		19850827		
AB	<p>Ferroelec. liquid crystal compns. containing optically-active compds. of the formula <math>p\text{-R1OCO2C6H4CO2(p-C6H4)nCO2CHMeR2}</math> (I; R1-R2 = C4-18 alkyl; n = 1-2) show a chiral smectic C phase and are useful in optical switching devices. Thus, refluxing 4-benzyloxybenzoic acid with <math>\text{SOCl}_2</math> gave the acid chloride, which was treated with S-(+)-2-octanol in pyridine/PhMe, then the resulting 1-methylheptyl 4-benzyloxybenzoate was debenzylated over Pd/C to give optical-active 4-HOC6H4CO2CHMeC6H13 (II). 4-ClCOC6H4OCO2C8H17, prepared from 4-HOC6H4CHO and ClCO2C8H17, was treated with II in pyridine to give optically-active I (R1 = C8H17; R2 = C6H13; n = 1) (III). A liquid crystal composition containing 100 parts of a mixture of Et(p-C6H4)2CN, C5H11(p-C6H4)2CN, C8H17O(p-C6H4)2CN, and C5H11(p-C6H4)3CN and 0.1 part III showed no reverse twist domain and formed a homogeneous nematic phase.</p>				
IT	<p><b>111153-19-6P</b>            RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent) (preparation and esterification of, liquid crystals from)</p>				
RN	111153-19-6 CAPLUS				
CN	[1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (1S)-1-methylheptyl ester (9CI) (CA INDEX NAME)				

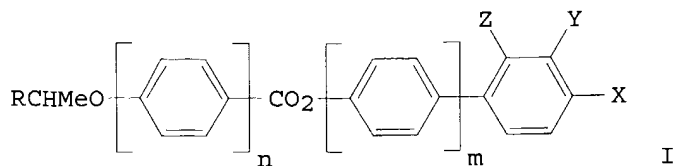
Absolute stereochemistry.



L20 ANSWER 268 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1987:608996 CAPLUS  
 DN 107:208996  
 TI Optically active compounds and liquid crystal compositions  
 IN Inoue, Hiromichi; Saito, Shinichi; Miyazawa, Kazutoshi; Inukai, Takashi; Terajima, Kenji  
 PA Chisso Corp., Japan  
 SO Jpn. Kokai Tokkyo Koho, 8 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61267540	A2	19861127	JP 1985-283110	19851218
	JP 06010170	B4	19940209		
	US 4689176	A	19870825	US 1985-811757	19851220
PRAI	JP 1984-277077		19841226		
GI					





AB Optically active compds. of the formula I (R = C2-15 alkyl; X = CN, halo; Y, Z = H, halo; one of Y and Z = H; n = 1, 2; m = 0,1), and chiral smectic liquid crystal compns. containing I for use in display devices are claimed.

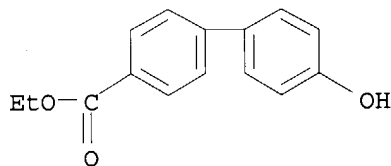
The optical compds. inhibit formation of reverse domains in the liquid crystals. The preparation of I (R = n-C6H13; X = F; Y = Z = H; n = 2, m = 0) (II) and I (R = n-C6H13; X = Br, Y = Z = H; n = m = 1) are presented, and the effect of II on inhibiting reverse domain formation in a liquid crystal composition was demonstrated.

IT 50670-76-3

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, with methylheptyl toluenesulfonate)

RN 50670-76-3 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 269 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:524759 CAPLUS

DN 107:124759

TI Liquid-crystal compositions for optical switching devices

IN Takehara, Sadao; Fujisawa, Noburu; Ogawa, Hiroshi; Shoji, Tadao; Osawa, Masashi; Arai, Tadashi; Kurokawa, Jitsuo

PA Dainippon Ink and Chemicals, Inc., Japan; Kawamura Physical and Chemical Research Institute

SO Jpn. Kokai Tokkyo Koho, 7 pp.

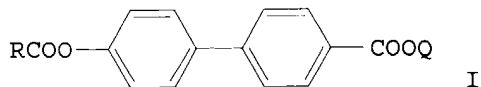
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 62072652	A2	19870403	JP 1985-211161	19850926
PRAI	JP 1985-211161		19850926		
GI					



AB Liquid-crystal compns. containing I (R = C1-20 alkyl, alkenyl, perfluoroalkyl; Q

= optically active group) are useful for optical switching devices. The compns. show ferroelec. properties near room temperature and good light and chemical stability and give liquid-crystal display device with quick response. Thus, treating (S)-2-methylbutyl 4'-hydroxybiphenyl-4-carboxylate with n-decanoyl chloride in pyridine/CH<sub>2</sub>Cl<sub>2</sub> gave 84.5% (S)-I (R = n-nonyl, Q = 2-methylbutyl) (II). A composition of 1 part II and 1 part (S)-I [R = cis-Me(CH<sub>2</sub>)<sub>7</sub>CH:CH(CH<sub>2</sub>)<sub>7</sub>; Q = 2-methylbutyl) showed a smectic A-chiral smectic C transition at 32°, and a liquid-crystal composition containing II had response time 100 μs.

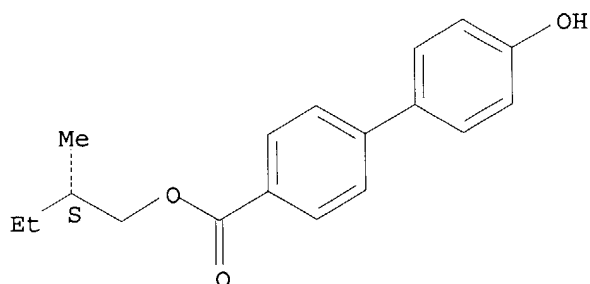
IT 91577-91-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(condensation of, with acyl chlorides)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester  
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 270 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:205384 CAPLUS

DN 106:205384

TI Liquid crystal compositions containing chiral ether compounds

IN Korishima, Tomonori; Takei, Ryutaro; Aoyama, Eriko

PA Asahi Glass Co., Ltd., Japan

SO Jpn. Kokai Tokkyo Koho, 9 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61243037	A2	19861029	JP 1985-81271	19850418
PRAI	JP 1985-81271		19850418		

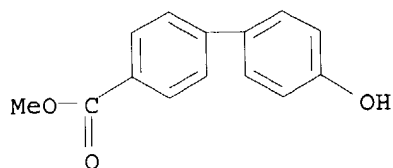
AB Ferroelec. smectic liquid-crystal compns. contain chiral ethers RCHMeO(p-C<sub>6</sub>H<sub>4</sub>)nZZ1Z2R1 (I: R = C<sub>2</sub>-12 alkyl; R<sub>1</sub> = C<sub>1</sub>-12 alkyl or alkoxy; Z = CO<sub>2</sub>, CH<sub>2</sub>CH<sub>2</sub>, CH<sub>2</sub>O, OCH<sub>2</sub>; Z<sub>1</sub>-Z<sub>2</sub> = 1,4-C<sub>6</sub>H<sub>4</sub>, trans-1,4-cyclohexylene, direct bond; n = 1, 2). Thus, refluxing D-(+)-2-octyl p-toluenesulfonate and 4-HOC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>Me in Me<sub>2</sub>CO/xylene with K<sub>2</sub>CO<sub>3</sub> overnight gave Me p-2-octyloxybenzoate, which was hydrolyzed, refluxed with SOCl<sub>2</sub> to give an acid chloride, and treated with 4'-hexyloxy-4-hydroxybiphenyl to give I (R = C<sub>6</sub>H<sub>13</sub>; R<sub>1</sub> = C<sub>6</sub>H<sub>13</sub>O; Z = CO<sub>2</sub>; Z<sub>1</sub>-Z<sub>2</sub> = p-ClH<sub>4</sub>; n = 1) (II). A liquid-crystal composition containing 95% 4-hexyloxyphenyl 4-octyloxybenzoate and 5% II showed high maximum smectic temperature and large spontaneous polarization.

IT 40501-41-5, Methyl 4'-hydroxybiphenyl-4-carboxylate

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, in preparation of chiral ethers for smectic liquid-crystal compns.)

RN 40501-41-5 CAPLUS

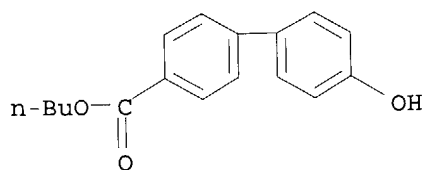
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 271 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1987:111387 CAPLUS  
 DN 106:111387  
 TI A cyanide-free desensitizer solution for offset printing plates  
 IN Suzuki, Hiroaki; Tanaka, Masayasu; Iwai, Masaaki; Osawa, Sadao; Kita, Nobuyuki  
 PA Tomoegawa Paper Mfg. Co., Ltd., Japan; Fuji Photo Film Co., Ltd.  
 SO Jpn. Kokai Tokkyo Koho, 6 pp.  
 CODEN: JKXXAF  
 DT Patent  
 LA Japanese  
 FAN.CNT 1

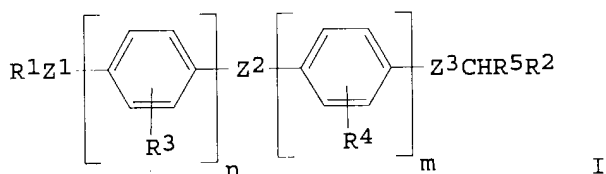
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 61163897	A2	19860724	JP 1985-4919	19850117
PRAI	JP 1985-4919		19850117		

AB The claimed offset printing plate desensitizer solution contains (1) an anionic compound which forms a chelate with Zn ion, (2) a cationic surfactant, and (3) an (in)organic electrolyte whose solubility in water (at room temperature) is  $\geq 10$  weight%. Thus, phytic acid  $\text{NH}_4$  salt 100,  $(\text{NH}_4)_2\text{SO}_4$  80, benzyldimethyldodecylammonium chloride 10, salicylic acid 1, and glycerin 200 parts were mixed in 1000 parts  $\text{H}_2\text{O}$  and the pH was adjusted to 4.2 (with  $\text{NH}_3$ ) to give a lithog. desensitizer solution  
 IT **106986-59-8**, Butyl 4-(4-hydroxyphenyl)benzoate  
 RL: USES (Uses)  
 (lithog. desensitizer solution containing)  
 RN 106986-59-8 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, butyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 272 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1987:93753 CAPLUS  
 DN 106:93753  
 TI Polyphenyl-based ester compounds and liquid crystal compositions containing them  
 IN Higuchi, Ryoichi; Sakurai, Takao; Tabohashi, Tatsuru; Mikami, Naoka; Akaiwa, Kiriko; Yamamoto, Eri; Takeuchi, Koji  
 PA Ajinomoto Co., Inc., Japan  
 SO Eur. Pat. Appl., 21 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	EP 191600	A2	19860820	EP 1986-300799	19860206
	EP 191600	A3	19870520		
	EP 191600	B1	19911227		
	R: DE, FR, GB				
	JP 62000046	A2	19870106	JP 1986-22505	19860204
	US 4728458	A	19880301	US 1986-827449	19860210
	JP 62030740	A2	19870209	JP 1986-92485	19860422
	JP 62053943	A2	19870309	JP 1986-126551	19860530
	JP 62228042	A2	19871006	JP 1986-169557	19860718
	US 4831182	A	19890516	US 1987-41428	19870423
	US 4911861	A	19900327	US 1987-121071	19871116
	US 5100579	A	19920331	US 1989-418341	19891006
PRAI	JP 1985-22920		19850208		
	JP 1985-87034		19850423		
	JP 1985-117053		19850530		
	JP 1985-162656		19850723		
	JP 1984-189232		19840910		
	US 1985-774484		19850910		
	JP 1985-283769		19851217		
	US 1986-827449		19860210		
	US 1987-121071		19871116		
OS	CASREACT 106:93753				
GI					



AB A liquid crystal compound, useful in displays, is represented by the formula I (R1 = straight or branched C1-18 alkyl, haloalkyl, aralkyl, or haloaralkyl, each with or without optically active C; R2 = straight or branched C1-6 alkyl, haloalkyl, or aralkyl, each with or without optically active C; Z1 = single bond, O, OCO2, O2C, or CO2; R5 = halo or Me when Z1 is O2C or CO2 and R5 = halo when Z1 = single bond, O, or CO2; Z2 = O2C, CO2, C:C, HC:N or N:CH; Z3 = single bond, O, CO2, O2C, CH2, OCH2, CO2CH2, or O2CCH2; R3, R4 = H, halo, CN, or NO2, R3 and R4 being the same or different; and n, m ≥ 1 and n + m ≥ 3. Thus, in the preparation of (S)-2-methylbutylbenzoic acid 4'-(4'-heptylcarbonyloxyphenyl)phenyl ester (II), 4,4'-biphenol 40 g was dissolved in pyridine 30 mL. Heptyl carboxylic acid chloride 19 mL was then dropped into the stirred solution After heating for 1 h, H2O was added to the mixture to obtain crystals; after separating the crystals, the residue was purified by Soxhlet extraction with

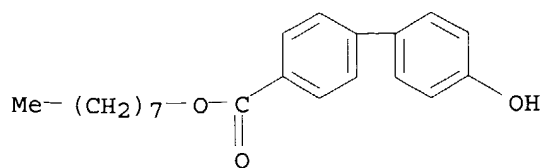
PhMe to give 4-(4'-heptylcarbonyloxyphenyl)phenyl (III). III 8, dicyclohexylcarbodiimide 6.2, (S)-2-methylbutylbenzoic acid 4.5 g and 4-pyrrolidinopyridine were dissolved with CCl4 500 mL and allowed to stand for 6 h. After separating the crystals, the residue was passed through a silica-gel column to obtain II. In applying a square-wave voltage to the compds., clear contrast and high-speed response were observed

IT 106793-62-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and reaction of, for Ph ester liquid crystals for displays)

RN 106793-62-8 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, octyl ester (9CI) (CA INDEX NAME)



IT 91577-91-2

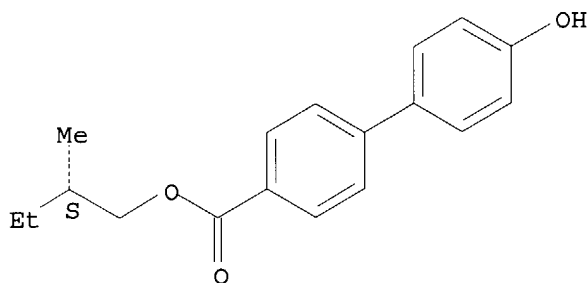
RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction of, for Ph ester liquid crystals for displays)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester  
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 273 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1987:59023 CAPLUS

DN 106:59023

TI Liquid crystalline compounds having substituents

IN Takehara, Sadao; Fujisawa, Toru; Arai, Yoshi; Kurokawa, Jitsuo

PA Dainippon Ink Chemical Industry Co., Japan; Kawamura Physical and Chemical Research Institute

SO Eur. Pat. Appl., 57 pp.

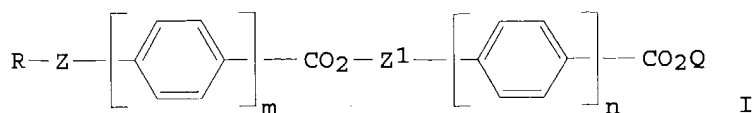
CODEN: EPXXDW

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
	-----	----	-----	-----	-----
PI	EP 188222	A2	19860723	EP 1986-100165	19860108
	EP 188222	A3	19861105		
	EP 188222	B1	19920429		
	R: CH, DE, GB, LI				
	JP 61161244	A2	19860721	JP 1985-1791	19850109
	JP 06029222	B4	19940420		
	JP 61229841	A2	19861014	JP 1985-71628	19850404
	JP 06029223	B4	19940420		
	JP 61238762	A2	19861024	JP 1985-81688	19850417
	JP 06029224	B4	19940420		
	JP 61249953	A2	19861107	JP 1985-90676	19850426
	JP 06078280	B4	19941005		
	US 4828754	A	19890509	US 1988-161421	19880223
PRAI	JP 1985-1791		19850109		
	JP 1985-71628		19850404		
	JP 1985-81688		19850417		
	JP 1985-90676		19850426		
	US 1986-815935		19860103		



AB Liquid crystal compds. for display devices are represented by I, where R is a C1-20 alkyl or alkoxy group; m and n are each 0 or 1, provided m and n are not 1 at the same time; Z is a 2-X-1,4-phenylene or 3-X-1,4-phenylene group and Z<sup>1</sup> is a 2-Y-1,4-phenylene or 3-Y-1,4-phenylene group, where X and Y are each H, a halogen atom or a nitro group, provided X and Y are not H at the same time; and Q is an optically active group having a chiral C atom and a linear or cyclic alkyl or alkenyl group which may be substituted by a halogen atom. When Q is a 2-methylbutyl group, a 1-methylalkyl group having 4-8 C atoms, or a 2-chloropropyl group, the liquid crystal compound may have a chiral smectic C phase. Thus, 3-fluoro-4-dodecyloxybenzoic acid chloride 3.32 and (S)-2-methylbutyl 4'-hydroxybiphenyl-4-carboxylate 2.84 g were reacted in pyridine 10 and CH<sub>2</sub>Cl<sub>2</sub> 15 mL for 3 h under reflux. After the reaction mixture cooled, Et acetate 50 mL was added and washing twice with 10% HCl and once each with saturated NaHCO<sub>3</sub> aqueous solution and saturated NaCl aqueous solution were performed. After the

reaction. product was dried with anhydrous Na sulfate, the solvent was concentrated

The crude crystals obtained were purified by column chromatog. on SiO<sub>2</sub> gel with CHCl<sub>3</sub>/hexane and recrystd. from EtOH to obtain 4.64 g of 4-(4-[(S)-2-methylbutyloxycarbonylphenyl]phenyl)phenyl 3-fluoro-4-dodecyloxybenzoate (II). II was heated at 160° to form an isotropic liquid and placed in a thin cell. The cell was cooled at 5°/min to align the smectic phase and a uniform monodomain was obtained. The cell was cooled to <118° to obtain a chiral smectic C phase. An elec. field (20 V, 50 Hz rectangular wave) was applied at 102° and the light switching action took 100 μs. When a triangular wave was applied to the cell at 102° the spontaneous polarization was 2.24 nC/cm<sup>2</sup>.

IT 106316-31-8P

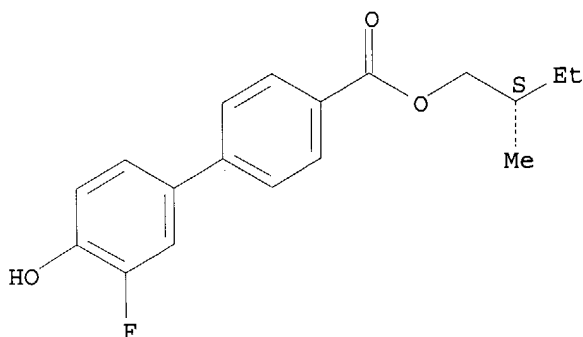
RL: PREP (Preparation)

(preparation of, for liquid-crystal display devices)

RN 106316-31-8 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 3'-fluoro-4'-hydroxy-, 2-methylbutyl ester, (S)- (9CI) (CA INDEX NAME)

Absolute stereochemistry.



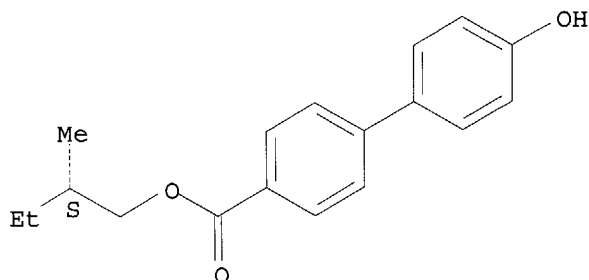
IT 91577-91-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction of, in preparation of liquid crystals for display devices)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester  
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 274 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:496524 CAPLUS

DN 103:96524

TI Alkyl 4-acyloxybiphenyl-4'-carboxylates

PA Chisso Corp., Japan

SO Jpn. Kokai Tokkyo Koho, 3 pp.

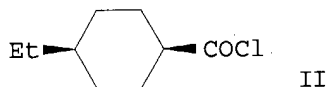
CODEN: JKXXAF

DT Patent

LA Japanese

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 60023476	A2	19850206	JP 1983-132498	19830720
PRAI	JP 1983-132498		19830720		
GI					



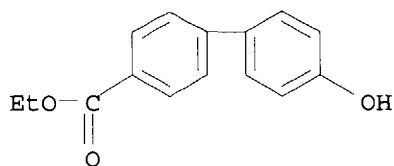
AB Title compds. RZCO<sub>2</sub>(1,4-C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>CO<sub>2</sub>R<sub>1</sub> (I) (R = C<sub>1</sub>-15 alkyl, alkoxy; R<sub>1</sub> = C<sub>1</sub>-15 alkyl; Z = 1,4-C<sub>6</sub>H<sub>4</sub>, trans-1,4-cyclohexylene), useful for liquid crystal compns., are prepared Thus, refluxing HO(1,4-C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>CO<sub>2</sub>H in MeOH under acidic condition gave 88% HO(1,4-C<sub>6</sub>H<sub>4</sub>)<sub>2</sub>CO<sub>2</sub>Me which was dissolved in pyridine and treated with II to give 68% I (R = Et; R<sub>1</sub> = Me; Z = trans-1,4-cyclohexylene) (III). Clearing point of liquid crystal composition containing 4-pentyl-4'-cyanobiphenyl, 4-heptyl-4'-cyanobiphenyl, and 4-octyloxy-4'-cyanobiphenyl increased from 44.3 to 57.1° upon the addition of 10% III.

IT 50670-76-3P

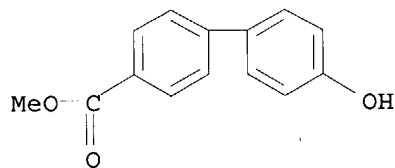
RL: RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(formation and reaction of, in preparation of liquid crystal for display device)

RN 50670-76-3 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



IT 40501-41-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, in preparation of liquid crystal for display device)  
 RN 40501-41-5 CAPLUS  
 CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 275 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
 AN 1985:430396 CAPLUS  
 DN 103:30396  
 TI Liquid crystalline carbonic acid esters and liquid crystal compositions containing them  
 IN Inoue, Hiromichi; Saito, Shinichi; Terashima, Kanetsugu; Inukai, Takashi; Furukawa, Kenji  
 PA Chisso Corp. , Japan  
 SO Eur. Pat. Appl., 29 pp.  
 CODEN: EPXXDW  
 DT Patent  
 LA English  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	EP 136845	A2	19850410	EP 1984-306068	19840905
	EP 136845	A3	19860326		
	EP 136845	B1	19880601		
	R: CH, DE, FR, GB, LI				
	JP 60054341	A2	19850328	JP 1983-162766	19830905
	JP 04017174	B4	19920325		
	US 4589996	A	19860520	US 1984-645097	19840828
PRAI	JP 1983-162766		19830905		

OS CASREACT 103:30396

AB Chiral liquid crystalline compds. for display applications comprise a carbonic acid ester 4-ROCO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>C<sub>6</sub>H<sub>4</sub>-(C<sub>6</sub>H<sub>4</sub>)L-ZCH<sub>2</sub>CHMeEt-4 (I: R = C<sub>1</sub>-18 alkyl; Z = CO<sub>2</sub>, O when L = O and CO<sub>2</sub>, O, CH<sub>2</sub> when L = 1). Thus, a mixture containing I (Z = CH<sub>2</sub>; R = C<sub>5</sub>H<sub>11</sub>, l = 1) 30, I (Z = CH<sub>2</sub>; R = C<sub>7</sub>H<sub>15</sub>; l = 1) 30, I (Z = CH<sub>2</sub>; R = C<sub>8</sub>H<sub>17</sub>; l = 1) 30, I (Z = CO<sub>2</sub>; R = C<sub>5</sub>H<sub>11</sub>; l = 1) 5, I (Z = CO<sub>2</sub>; R = C<sub>8</sub>H<sub>17</sub>; l = 1) 5 weight% exhibited chiral smectic C phase up to 87° and chiral smectic H phase at higher temps. and formed an isotropic liquid at 145° without passing through a smectic A phase. The composition was placed into a liquid crystal cell which was gradually cooled till the chiral smectic C was formed while a d.c. of 50 V was impressed. The cell was placed between 2 polarizers arranged in a crossed Nicol state, and when an alternating voltage of 15 V (0.5 Hz) was impressed to the cell, a clear switching operation was observed and a liquid crystal display element having a good contrast and a high response velocity (2 ms) was obtained. Spontaneous polarization value of this composition was 2.9 nC/cm<sup>2</sup>.



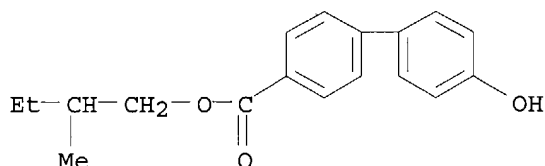
IT 97054-77-8P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)

(preparation and reaction with nonyloxycarbonyloxybenzoic acid chloride, in preparation of liquid crystalline compound)

RN 97054-77-8 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, 2-methylbutyl ester (9CI)  
(CA INDEX NAME)



L20 ANSWER 276 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1985:7514 CAPLUS

DN 102:7514

TI Synthesis of smectic liquid-crystalline polysiloxanes from biphenylcarboxylate esters and their use as stationary phases for high-resolution gas chromatography

AU Jones, Brian A.; Bradshaw, Jerald S.; Nishioka, Masaharu; Lee, Milton L.

CS Dep. Chem., Brigham Young Univ., Provo, UT, 84602, USA

SO Journal of Organic Chemistry (1984), 49(25), 4947-51

CODEN: JOCEAH; ISSN: 0022-3263

DT Journal

LA English

AB Liquid crystalline CH<sub>2</sub>:CH(CH<sub>2</sub>)<sub>a</sub>O(p-C<sub>6</sub>H<sub>4</sub>)<sub>b</sub>CO<sub>2</sub>(p-C<sub>6</sub>H<sub>4</sub>)<sub>c</sub>R (a = 1 or 3; b = 1 or 2; c

= 1 or 2; R = OMe or chiral CO<sub>2</sub>CH<sub>2</sub>CHMeEt) (8 compds.) were prepared and used to alkylate MeH siloxane, giving siloxanes also possessing liquid crystalline properties. A siloxane treated with 2 chiral esters was used to sep. methyl dibenzothiophene isomers when used as a stationary phase in high-resolution gas chromatog.

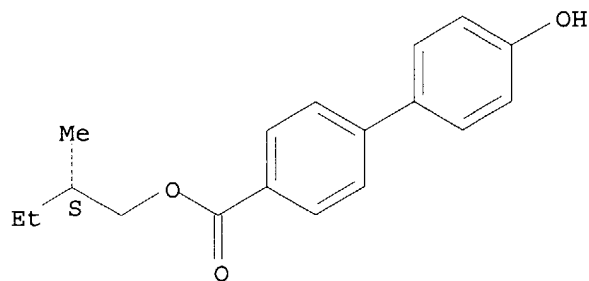
IT 91577-91-2

RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, with benzoic acid derivs.)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester (9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



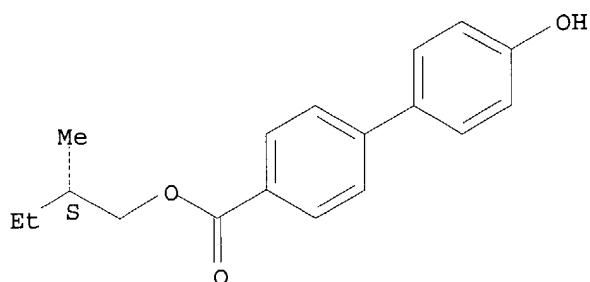
IT 91577-91-2P

RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation and esterification of)

RN 91577-91-2 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, (2S)-2-methylbutyl ester  
(9CI) (CA INDEX NAME)

Absolute stereochemistry. Rotation (-).



L20 ANSWER 277 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN

AN 1973:547435 CAPLUS

DN 79:147435

TI Stilbene fluorescent whiteners

IN Fleck, Fritz; Kittl, Hans; Valenti, Salvatore

PA Sandoz Ltd.

SO Ger. Offen., 71 pp.

CODEN: GWXXBX

DT Patent

LA German

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2262340	A1	19730628	DE 1972-2262340	19721220
	CH 584670	A	19770215	CH 1971-18907	19711224
	NL 7217265	A	19730626	NL 1972-17265	19721219
	BE 793273	A1	19730622	BE 1972-125778	19721222
	FR 2164888	A1	19730803	FR 1972-45944	19721222
	BR 7209096	A0	19730913	BR 1972-9096	19721222
	JP 48073428	A2	19731003	JP 1972-129169	19721222
	GB 1417019	A	19751210	GB 1972-59306	19721222
	IT 974353	A	19740620	IT 1972-55057	19721227
	US 4179578	A	19791218	US 1977-787510	19770414
PRAI	CH 1971-18907		19711224		
	CH 1972-1123		19720126		
	US 1972-316448		19721219		
	US 1975-596287		19750716		

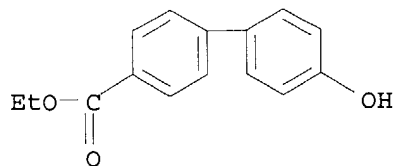
AB Sixteen stilbenes I [R = NC, p-NCC6H4, 2-benzoxazolyl, 2-phenyl-v-triazol-4-yl, 4-(2-benzoxazolyl)phenyl, 2,4-diphenyl-v-triazin-6-yl, p-PhSO2C6H4, or p-EtO2CC6H4; R1 = H or CN; R2 = H, CN, Cl, Br, CO2Et, SO2Ph, 2-benzoxazolyl, or 2-phenyl-v-triazol-4-yl; R3 = H, Cl, or Me; n = 0 or 1], fluorescent whiteners for cotton, synthetic fibers, and poly(vinyl chloride) films, were prepared. Thus, p-MeC6H4COCH:NOH, prepared from p-MeC6H4COMe and isoamyl nitrite, was treated successively with PhNHNH2 in MeOH-AcOH and heated 3 hr at 175.deg. in molten urea to give 2-phenyl-4-p-tolyl-v-triazole [36200-47-2] which on bromination with N-bromosuccinimide and Bz2O2 in CCl4 gave 2-phenyl-4-[p-(bromomethyl)phenyl]-v-triazole (II) [41973-93-7]. II was heated with Ph3P in DMF 3 hr at 80.deg. and subsequently with p-terphenylcarboxaldehyde and NaOMe 3 hr at 80.deg. to give fluorescent whitener (I, R = 2-phenyl-v-triazol-4-yl, R1 = R2 = R3 = H, n = 1) [41973-71-1]. The other I were prepared similarly.

IT 50670-76-3

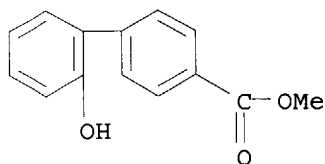
RL: RCT (Reactant); RACT (Reactant or reagent)  
(esterification of, with fumaroyl chloride)

RN 50670-76-3 CAPLUS

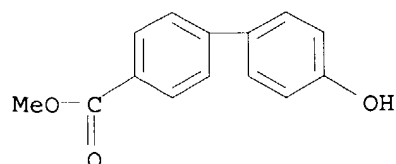
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, ethyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 278 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1973:28981 CAPLUS  
DN 78:28981  
TI Photorearrangement of o-phenoxybenzoic acid to phenyl salicylate and related reactions  
AU Yang, Nien-Chu; Kumler, Philip; Yang, Shu Shu  
CS Dep. Chem., Univ. Chicago, Chicago, IL, USA  
SO Journal of Organic Chemistry (1972), 37(25), 4022-6  
CODEN: JOCEAH; ISSN: 0022-3263  
DT Journal  
LA English  
OS CASREACT 78:28981  
AB Irradiation of o-phenoxybenzoic acid and its derivs. with uv light yields Ph salicylate in moderate to high yield. The reaction involves the migration of the Ph group from the phenoxy O to the acyl O.  
IT 40501-40-4P 40501-41-5P  
RL: SPN (Synthetic preparation); PREP (Preparation)  
(preparation of)  
RN 40501-40-4 CAPLUS  
CN [1,1'-Biphenyl]-4-carboxylic acid, 2'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)



RN 40501-41-5 CAPLUS  
CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester (9CI) (CA INDEX NAME)



L20 ANSWER 279 OF 280 CAPLUS COPYRIGHT 2004 ACS on STN  
AN 1972:47246 CAPLUS  
DN 76:47246  
TI Linear 4'-(ω-hydroxyalkyloxy) biphenyl-4-carboxylate polymers for fibers  
IN Shima, Takeo; Yamashiro, Seiichi; Inata, Hiroo

PA Teijin Ltd.  
 SO Ger. Offen., 5 pp.  
 CODEN: GWXXBX  
 DT Patent  
 LA German  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	DE 2105928		19710930		
	CA 975496			CA	
	FR 2079335			FR	
	GB 1343189			GB	
	JP 48004111		19730000	JP	
	JP 48004113		19730000	JP	
	JP 48033774		19730000	JP	
	US 3758442		19730000	US	
PRAI	JP		19700209		
	JP		19700731		

AB The title compds. (I) were prepared by polymerization of

p-HO(CH<sub>2</sub>)<sub>n</sub>OC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>R-p

(II), n = 2, 3, 4 or 6, R=Me, Et, or Ph) or copolymn. of II with, e.g., diols, diesters, or hydroxycarboxylic esters. I were used for the manufacture of high-melting fibers with high elastic recovery, hydrolysis resistance and low shrinkage. Thus, II (n=2, R=Me) was heated with Ti K oxalate 30 min at 280.deg., 2 hr at 315.deg./0.5mm, and 4 hr at 270.deg./0.5mm to give poly(oxyethylenoxy-4,4'-biphenylylenecarbonyl) (III) [34033-15-3]. Fibers prepared from III by extrusion at 320.deg. and stretching 1:3.42 had elastic recovery 96.0 at 10% stretching, work yield 65 at 10% stretching, and shrinkage in boiling water 1.1, as compared to 57.3, 18, and 8.1, resp., for poly(ethylene terephthalate) fibers.

IT 35617-68-6

RL: USES (Uses)  
 (fiber)

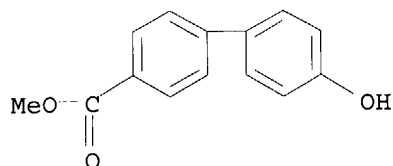
RN 35617-68-6 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 4'-hydroxy-, methyl ester, polymer with 1,3-dioxolan-2-one (9CI) (CA INDEX NAME)

CM 1

CRN 40501-41-5

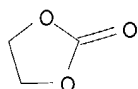
CMF C14 H12 O3



CM 2

CRN 96-49-1

CMF C3 H4 O3



AN 1962:53136 CAPLUS

DN 56:53136

OREF 56:10030e-i,10031a-c

TI Intramolecular interaction between hydroxyl group and  $\pi$ -electrons. XIV.  
Electronic effect of the substituents on the interaction in  
2-hydroxybiphenyls

AU Oki, Michinori; Iwamura, Hiizu

CS Univ. Tokyo

SO Bulletin of the Chemical Society of Japan (1961), 34, 1395-401

CODEN: BCSJA8; ISSN: 0009-2673

DT Journal

LA Unavailable

AB 2,4-NH<sub>2</sub>(MeO)C<sub>6</sub>H<sub>3</sub>Ph (4 g.) in 4.5 ml. H<sub>2</sub>SO<sub>4</sub> and 6 ml. H<sub>2</sub>O was diazotized with 1.5 g. NaNO<sub>2</sub> in 3 ml. H<sub>2</sub>O. Excess NaNO<sub>2</sub> was decomposed by urea and the solution poured into 20 ml. boiling 30% H<sub>2</sub>SO<sub>4</sub>, the insol. oil dissolved in ether, the ether extracted with 20% NaOH, and the alkaline extract acidified and extracted with ether. The ether was evaporated and the residue extracted with petr.

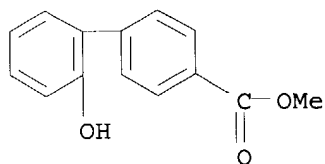
ether to give 2,4-(HO)(MeO)C<sub>6</sub>H<sub>3</sub>Ph, m. 66-7°. 2,4-(NO<sub>2</sub>)ClC<sub>6</sub>H<sub>3</sub>NH<sub>2</sub> (86 g.) was diazotized and the diazo compound decomposed with NaOAc in the presence of 2 l. thiophene-free C<sub>6</sub>H<sub>6</sub>, stirred overnight, the C<sub>6</sub>H<sub>6</sub> layer washed with NaOH, the solvent evaporated, and the residue distilled to give 2,4-(NO<sub>2</sub>)ClC<sub>6</sub>H<sub>3</sub>Ph (I). I was catalytically reduced with platinized Raney Ni to give 2,4-(NH<sub>2</sub>)ClC<sub>6</sub>H<sub>3</sub>Ph which was diazotized and decomposed with 30% H<sub>2</sub>SO<sub>4</sub> to give 2,4-(HO)ClC<sub>6</sub>H<sub>3</sub>Ph, m. 38.5-9° (CCl<sub>4</sub>). Catalytic reduction (PtO<sub>2</sub>) of 2,5-(HO)AcC<sub>6</sub>H<sub>3</sub>Ph (II) gave 2,5-(HO)EtC<sub>6</sub>H<sub>3</sub>Ph, b<sub>2</sub> 122°, n<sub>D</sub> 1.5893. Oxidation of II in C<sub>5</sub>H<sub>5</sub>N with iodine to the  $\beta$ -oxoalkylpyridinium iodide and cleavage with NaOH gave 2,5-(HO)(HO<sub>2</sub>C)C<sub>6</sub>H<sub>3</sub>Ph which was esterified to give 2,5-HO(MeO<sub>2</sub>C)C<sub>6</sub>H<sub>3</sub>Ph, m. 128-9.5°. To a mixture of 30 g. m-BrC<sub>6</sub>H<sub>4</sub>OMe and 50 g. o-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>Cl was added 50 g. Cu bronze in 5 portions at 200°, the mixture kept at 200-40° 5 hrs., cooled, extracted with acetone, and the extract distilled. The fraction b<sub>1</sub>-2 150-75° gave 10 g. 2-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>OMe-3 (III), m. 83-4°. III was reduced catalytically to the NH<sub>2</sub> derivative (N-Ac derivative m. 114°) which was diazotized and hydrolyzed to 2-HOC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>OMe-3, m. 90-1°. 2-NH<sub>2</sub> C<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>Me was diazotized and hydrolyzed to give 2-HOC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>Me-3, m. 88-9° (CCl<sub>4</sub>). 2-MeOC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>NO<sub>2</sub>-3 (3 g.) in 50 ml. AcOH was heated with 20 ml. 48% HBr to give 2-HOC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>NO<sub>2</sub>-3, m. 99.5-100°. 2-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>OMe-4 was reduced with SnCl<sub>2</sub>HCl to the amine which was diazotized and hydrolyzed to 2-HOC<sub>6</sub>H<sub>4</sub>-C<sub>6</sub>H<sub>4</sub>OMe-4, m. 65-5.5° (CCl<sub>4</sub>-petr. ether). 2-HOC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>NH<sub>2</sub>-4 was diazotized, the diazonium solution added to hot K iodide solution to give 2-HOC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>I-4, m. 74°. o-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>Cl (50 g.) and p-IC<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>Me (26 g.) were heated at 230-40° with 80 g. Cu bronze 3 hrs., cooled, extracted with acetone, 2,2'-(NO<sub>2</sub>)<sub>2</sub>(C<sub>6</sub>H<sub>4</sub>)<sub>2</sub> filtered off, the filtrate evaporated, the residue refluxed with 500 ml. alc. and 160 ml. 10% NaOH 3 hrs., diluted with H<sub>2</sub>O to 1 l., and acidified to give 6 g. 2-O<sub>2</sub>NC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H-4 (IV). IV was reduced catalytically to the amine, diazotized, and hydrolyzed to 2-HOC<sub>6</sub>H<sub>4</sub>-C<sub>6</sub>H<sub>4</sub>CO<sub>2</sub>H-4 which was esterified to give 2-HOC<sub>6</sub>H<sub>4</sub>C<sub>6</sub>H<sub>4</sub>-CO<sub>2</sub>Me<sub>4</sub>, m. 133-3.5° (CCl<sub>4</sub>). Infrared spectra were measured for 2-PhC<sub>6</sub>H<sub>4</sub>OH and derivs., and the results discussed. The 2 bands in the 3  $\mu$  region are not derived from intermol. H bonding but from intramol. origin. The absorptions of 2-PhC<sub>6</sub>H<sub>4</sub>OH at the higher and lower wave nos. are assigned resp. to the trans form of the tool. having the free OH group, and to the cis form having intramol. interaction with  $\pi$  electrons in the other C<sub>6</sub>H<sub>6</sub> ring. Intensities and maxima of these 2 bands vary considerably with substitution on the C<sub>6</sub>H<sub>6</sub> rings. Substitution on B ring (not having OH group) has a greater effect than substitution on ring A (with OH group). In ring A electron-attracting substituents strengthen and electron-donating substituents weaken the intramol. interaction. In ring B the reverse is true. In ring B 3' electrophilic substituents weaken the interaction more than the corresponding 4'

substituents. MeO at 3' and 4' positions have equal effect. In 2-hydroxybiphenyls 28% of the electronic effect of the substituents can be transmitted to the other ring.

IT 40501-40-4, 4-Biphenylcarboxylic acid, 2'-hydroxy-, methyl ester  
(preparation of)

RN 40501-40-4 CAPLUS

CN [1,1'-Biphenyl]-4-carboxylic acid, 2'-hydroxy-, methyl ester (9CI) (CA  
INDEX NAME)



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